

AF
SPW

VIA FACSIMILE AND HAND DELIVERY

PATENT
Customer No. 22,852
Attorney Docket No. 7027-0001-01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:)
)
FRIED, David) Group Art Unit: 3622
)
Application No.: 09/613,153) Examiner: RETTA, Y.
)
Filed: July 6, 2000)
)
For: COMPUTERIZED SYSTEM AND)
METHOD FOR CREATING A)
BUYBACK STOCK INVESTMENT)
REPORT)

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: Administrative Patent Judge Martin

SUPPLEMENTAL BRIEF ON LIZARDTECH

In support of its Notice of Appeal filed May 7, 2004, and pursuant to a request from the Board at the Hearing held December 12, 2005, Appellant submits this Supplemental Brief to address the Federal Circuit's decision in *Lizardtech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336 (Fed. Cir. 2005).

If additional fees are required or if the enclosed payment is insufficient, please charge the deficiencies to Deposit Account No. 06-0916. If a fee is required for an extension of time under 37 C.F.R. § 1.136 and such fee is not accounted for above,

Best Available Copy

Appellant's petition for such an extension and request that the fee be charged to Deposit Account No. 06-0916.

I. BACKGROUND

At the Hearing in this Appeal, Appellant's representative asserted that the final rejections based on 35 U.S.C. § 112, ¶ 1 and § 251 should be reversed for a variety of reasons, including the reasons outlined in the Appeal Brief filed August 6, 2004. During the Hearing, the Board suggested that a recent decision from the Federal Circuit in *Lizardtech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336 (Fed. Cir. 2005), might be applicable to this case. In light of the fact that this decision post-dates the filing of the Appeal Brief, the Board requested that the Appellant submit this Supplemental Brief to address Appellant's positions in view of the Federal Circuit's decision. Appellant respectfully thanks the Board for the courtesies extended in granting leave to file this Supplemental Brief.

II. SUMMARY

The Examiner rejected claims 21-81 under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement. The claims, according to the Examiner, cover subject matter that was not disclosed in the '286 patent specification in such a way as to reasonably convey to one skilled in the art that the inventor had possession of the claimed invention.

In particular, reissue claims 21, 31, and 41 recite "generating [to generate] a report ranking a set of the identified stocks with buyback ratios based on ***at least one***

other selection criteria associated with performance of a corresponding company,” reissue claims 51, 61, and 71 recite “providing [to provide] an investment selection selecting at least one of the identified stocks with buyback ratios and reflecting **at least one other selection criteria associated with performance of a company** corresponding to the at least one selected stock,” and reissue claim 81 recites “selecting criteria for screening the selection of stock wherein the selected criteria consists of a buyback ratio and **a company performance ratio.**” The Examiner contends that the “specification does not disclose any other selection criteria other than the price/sales ratio and a price/earnings ratio.” Examiner’s Answer, p.7. Thus, according to the Examiner, “the claim[ed] [selection criteria associated with performance of a company and company performance ratio are] broader than what is disclosed.” *Id.* at p. 8.

In other words, the allegedly **undisclosed** subject matter according to the Examiner is subject matter **other than** two specifically disclosed criteria, namely, a company’s “price/sales ratio” and “price/earnings ratio.” Because the rejected claims potentially cover subject matter other than these two selection criteria and, according to the Examiner, the specification discloses only these two selection criteria, the Examiner rejected the reissue application claims 21-81 under 35 U.S.C. § 112, ¶ 1.

In addition to the reasons set forth in Appellant’s Appeal Brief, Appellant contends that the § 112, ¶ 1 rejection should be reversed because the specification teaches a generic procedure for making investment decisions that is **not** limited to screening or selecting stocks using a company’s buyback ratio only in combination with the company’s price/sales ratio or price/earnings ratio. As the specification and file

history for this application make plain, Appellant's generic process for establishing an investment portfolio requires consideration of a company's buyback ratio in combination with at least one other factor that those skilled in the art would associate with the company's performance; the disclosed price/sales ratio, price/earnings ratio, **and market capitalization** being examples of these factors.

Moreover, one skilled in the art reviewing the subject application would conclude that known selection criteria other than the price/sales ratio and a price/earnings ratio may be used in combination with the buyback ratio in making investment decisions in accordance with systems and methods consistent with the invention. There is simply no statement in the specification or file history that constitutes a disclaimer on the part of the Appellant of factors other than the price/sales ratio and price/earnings ratio that those skilled in the art would associate with the company's performance.

III. **LIZARDTECH**

In *Lizardtech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336 (Fed. Cir. 2005), the Federal Circuit affirmed a judgment invalidating claim 21 and its dependents on the grounds that they lacked a limitation that was closely tied to a disclosed procedure, and there was no evidence that the specification contemplated a more generic procedure.

The technology in the case involves "wavelet transforms," which allow digital images to be compressed with little loss of information by filtering out irrelevant and redundant data in the image data. The invention addresses a drawback of prior art methods, namely problems with calculating a "discrete wavelet transform" ("DWT")

based on the images. First, distances beyond the edges of images must be assigned artificial values to be used in the prior art algorithms, and these artificial values can cause aberrant results. Second, large images may need to be broken up into several pieces to save memory in the computing system used to calculate the DWT. When these large images are broken up into multiple smaller image tiles, additional edges or boundaries are created between the tiles. In the prior art, these tile boundaries typically created a large number of edge artifacts.

LizardTech's U.S. Patent Number 5,710,835 solves the boundary problem by calculating the DWT coefficients outside the boundaries of the tile and using the results of several DWT routines to produce output that was the same as if no artificial values were used in the calculations. These results produced a "seamless" DWT which was equivalent to a DWT routine applied to the entire image.

The district court's noninfringement ruling was predicated on its interpretation of the "maintaining updated sums" limitation in claims 1 and 13, which addresses how a "seamless" DWT of the image is formed. The district court construed that limitation to mean "summing the DWT coefficients of one tile together with overlapping DWT coefficients from one or more adjacent tiles." Both parties agreed with that construction.

Claim 21 of the '835 patent is identical to claim 1 except that it does not contain the "maintaining updated sums" and "periodically compressing said sums" limitations. The term "seamless" does not appear in claim 21. For that reason, the district court held that the process in claim 21 did not lead to a seamless set of DWT coefficients for the entire image. Because the specification did not describe a "nonseamless" DWT algorithm, the district court held that claim 21 and its dependent claims were

unsupported by the written description and thus were invalid. In response to that ruling, LizardTech maintained on appeal that because claim 21 does not explicitly state that the claimed DWT-based compression processes do not form a seamless DWT, claim 21 covers algorithms that result in a seamless DWT.

The Federal Circuit explained that a claim will not be invalidated on section 112 grounds simply because the embodiments of the specification do not contain examples explicitly covering the full scope of the claim language because the patent specification is written for a person of skill in the art, and such a person comes to the patent with the knowledge of what has come before. *Lizardtech*, 424 F.3d at 1345 (citations omitted). “Placed in that context, it is unnecessary to spell out every detail of the invention in the specification; only enough must be included to convince a person of skill in the art that the inventor possessed the invention and to enable such a person to make and use the invention without undue experimentation.” *Id.* The Court added, however, that the description in the patent specification of a single embodiment would support a generic claim only if the specification would “reasonably convey to a person skilled in the art that [the inventor] had possession of the claimed subject matter at the time of filing,” and would “enable one of ordinary skill to practice ‘the full scope of the claimed invention,’” *Id.* at 1346 (citations omitted). Thus, although only enough must be included in the specification to convince a person of skill in the art that the inventor possessed the invention and to enable such a person to make and use the invention without undue experimentation, a patentee cannot always satisfy the requirements of section 112, in supporting broad claim language, by describing only a single embodiment of the claimed invention.

The Federal Circuit agreed with LizardTech that a person of skill in the art, upon reading the entire patent and prosecution history, would understand the DWT-based compression processes recited in claim 21 to create a seamless DWT of the image. Thus, according to the Court, a person of skill in the art would recognize the DWT-based compression processes recited in claim 21 as creating a seamless DWT of the image. The Court, however, determined that this was not the end of the inquiry because the fact that claim 21 is directed to creating a seamless DWT does not mean that the claim is valid. The problem, as the Court put it, is that “the specification provides **only one** method for creating a seamless DWT, which is to ‘maintain updated sums’ of DWT coefficients.” *Id.* at 1344 (emphasis added).

[The maintain updated sums] procedure [is] recited by claim 1. Yet claim 21 is broader than claim 1 because it lacks the “maintain updated sums” limitation. Thus, a person of ordinary skill in the art would understand that claim 21 is directed to a seamless DWT. But because there are no limitations in claim 21 as to how the seamless DWT is accomplished, claim 21 refers to taking a seamless DWT generically. ... The trouble with allowing claim 21 to cover all ways of performing DWT-based compression processes that lead to a seamless DWT is that there is no support for such a broad claim in the specification. The specification provides only a single way of creating a seamless DWT, which is by maintaining updated sums of DWT coefficients. There is no evidence that the specification contemplates a more generic way of creating a seamless array of DWT coefficients.

Id.

IV. THE ‘286 PATENT SPECIFICATION DISCLOSES A GENERIC PROCEDURE FOR ESTABLISHING A STOCK INVESTMENT PORTFOLIO

Unlike the specification in *Lizardtech* that was held to not disclose a generic way of creating a seamless array of DWT coefficients, the ‘286 patent specification discloses a generic procedure for establishing a stock investment portfolio using buyback information associated with a company in combination with another value factor used in

predicting or analyzing company performance. In fact, there is no dispute that the '286 patent specification discloses more than one combination of factors for consideration in establishing a stock investment portfolio--the polar opposite of the facts in *Lizardtech*.

The issue in this case is whether the '286 patent specification clearly conveys in any way to those skilled in the art that the inventor had possession of an invention commensurate with the scope of the reissue claims. See *In re Smythe*, 480 F.2d 1376, 1382 (C.C.P.A. 1973) (reversing written description rejection of claims claiming the use of an "inert fluid" where original claims and specification only described the use of "air or other inert gas," the court finding that based on the function the matter was to perform the use of fluid was inherently disclosed). As counsel for the Appellant explained at the Hearing, the '286 patent specification provides ample description to support the breadth of the reissue claims.

Reissue claims 21, 31, and 41 recite "at least one other selection criteria associated with performance of a corresponding company," reissue claims 51, 61, and 71 recite "at least one other selection criteria associated with performance of a company," and reissue claim 81 recites "a company performance ratio." The '286 patent specification discloses more than one value factor used in predicting or analyzing company performance, and, hence, includes a disclosure commensurate with the scope of the reissue claims.

There is no question that the '286 patent specification discloses at least two factors used in predicting or analyzing company performance to be combined with the buyback ratio as part of the process for establishing a stock investment portfolio: the price/sales ratio and the price earnings ratio. The question is whether the disclosure of

these two factors is sufficient under § 112, ¶ 1, given that the reissue claims are not limited to these two factors. Appellant submits that the disclosure of these two factors, without more, is sufficient to satisfy the written description requirement of § 112, ¶ 1.

Lizardtech is not controlling here because this is simply not a situation where the specification discloses only one factor. On the contrary, there is no question that the '286 patent specification discloses two factors in addition to the buyback ratio to be used in establishing an investment portfolio. Moreover, Appellant submits that the specification discloses yet a third factor in addition to the price/sales ratio and the price/earnings ratio. The specification explains how the generic process may also involve a "market capitalization," which is another factor for analyzing company performance according to the referenced O' Shaugnessy text and Ford database.

Furthermore, the specification teaches even more broadly that a user selects criteria from among the criteria managed by a database (such as the Ford database), the criteria including at least buyback information. As the specification discloses in the context of the preferred embodiment, the examples of criteria to be combined with the buyback information--i.e., the price/sales ratio or the price/earnings ratio, have been proven to outperform other methodologies for establishing stock investment portfolios. However, there is simply no statement in the specification that these are the only two factors combinable with the buyback ratio in accordance with the invention, and Appellant submits that those skilled in the art would have been familiar with other known factors for analyzing company performance, like the different factors listed in the reference O' Shaugnessy text and Ford database.

The '286 patent specification initially explains that, prior to the invention, there was a conflict as to whether companies repurchasing their stocks outperform others. '286 patent, col. 1, lines 13-38. As such, information on company buybacks was considered unreliable as a factor to predict company performance.

The specification then explains that financial advisors relied on a "myriad of theories and factors in an attempt to find the best investment vehicles for their clients." *Id.* at col. 1, lines 39-42. "These theories are often based on age-old economic trends or newly developed calculations and stock screening techniques." *Id.* at col. 1, lines 42-44. The specification goes on to identify one known methodology for predicting or analyzing company performance with reference to a text that details many factors used in analyzing company performance.

One such recognized value factor for predicting or analyzing company performance is the price/sales ratio. The price/sales ratio is the relationship of a company's stock price to its annual sales (or revenues) per share. In the book, *What Works on Wall Street*, by J. P. [O'Shaughnessy] (1996), the author showed that the 50 stocks with the lowest price/sales ratio out performed the market by an average of 4.27 percentage points from Dec. 31, 1952 to Dec. 31, 1994.¹ *Id.* at col. 1, lines 44-51.

The inventor in this case determined that there was no procedure for establishing a stock investment portfolio that recognized the "performance of the price/sales ratio" combined with the "buyback theory," pointing out that many experts in the field discounted the importance of the "buyback theory." The specification then concludes

¹ A copy of the 1997 revised edition of "What Works on Wall Street" is attached as Exhibit A. Appellant notes that a patent issued to O'Shaughnessy (5,978,778) is also of record in this application. That patent outlines many different factors considered by those skilled in the art in establishing investment portfolios, including market capitalization, price-to-earnings ratios, price-to-book ratios, price-to-cashflow ratios, price-to-sales ratios, and dividend yields, and is further evidence of record as to the types of factors known to skilled artisans at the time of the invention.

the BACKGROUND section with a statement that there is a need for an “investment strategy that automatically determines those companies buying back the greatest percentage of their stock while maintaining the lowest price/sales ratio.”

While the BACKGROUND focused on there being a need for an investment strategy combining the buyback theory and the price/sales ratio as a predictor of a company’s performance, the SUMMARY OF THE INVENTION section of the ‘286 patent specification broadens the scope of the disclosed methodologies by adding another value factor used to predict or analyze company performance, namely, the “price/earnings ratio.” Thus, taking another example from the art of a value factor used to predict or analyze company performance, the inventor outlined in the summary at least two methodologies. The first involved analyzing companies using a buyback ratio and a price/sales ratio, and the second involved analyzing companies using a buyback ratio and a price/earnings ratio.

Both the price/sales ratio and the price/earnings ratio are examples of factors used to predict or analyze company performance known to those skilled art at the time of the invention. Those skilled in the art are well aware of other value factors used to predict or analyze company performance such as market capitalization, price/book ratio, price/cash flow ratio, and many others outlined in the O’Shaughnessy book referenced in the ‘286 patent specification (Exhibit A). Once it is known that an advantage can be gained by relating the buyback ratio to the price/earnings or the price/sales ratio (which was taught by the inventor), skilled artisans in the field would likely combine the buyback ratio with the other known factors to establish an investment portfolio.

The DETAILED DESCRIPTION section of the '286 patent specification includes a description of various embodiments or implementations consistent with the inventor's invention. Systems and methods consistent with the invention use a buyback ratio in combination with another value factor used to predict or analyze company performance, such as the price/sales ratio or price/earnings ratio, to guide investment decisions.

The '286 patent specification describes entering "a database 125 of company stock profiles including detailed information fields." *Id.*, col. 3, lines 7-9.

The Equity Portfolio Investment Computing (EPIC) database from Ford Invest[or] Services, Inc. is an example of a stock information database suitable for use with systems consistent with the present invention. *Id.*, col. 3, lines 13-16.

The Ford database is well-known to those skilled in the art of the invention. The stock information in this exemplary database has varied over time and includes nine categories of information:

1. Stock Valuation Data
2. Earnings Data and Cash Flow
3. Dividends Data
4. Company Financial Performance
5. Five Year Historical Data
6. Share Price History
7. Sales, Capitalization, & Ownership
8. Debt Ratios
9. Various Indicators

Exhibit B is a listing of the data elements in these categories along with information detailing or defining the data elements .

As shown in Exhibit B, the database manages 93 separate data elements for each company. Of the 93 elements, 14 are static in the sense that they do not concern the performance of the company (items 1-6, 84, 86-91, and 93). Those skilled in the art would appreciate that over 39 of the remaining 79 elements relate directly or indirectly

to a company's sales, earnings, or sales and earnings (e.g., items 7-15, 17-43, 45, 48-53, 55-57, 70, 74, 85, and 92). For example, the listing of items recorded in the Ford database under **Stock Valuation Data**, includes four distinct types of "price/earnings ratios":

11. Current price/earnings ratio using latest reported earnings.
12. Normal price/earnings ratio using Ford's normal earnings estimate.
13. Normal price/earnings ratio divided by the stock's 5-year average normal P/E.
14. Normal price/earnings ratio divided by the growth rate estimate.

Accordingly, when the '286 patent specification refers to a "price/earnings ratio," any one of these four data values (and perhaps others) may be included in the class. This means that even the recitation of "price/earnings ratio" in the specification is not limited to a single value. Rather, "price/earnings ratio" is a generic term encompassing multiple factors used in analyzing company performance.²

The '286 patent specification further discloses that a user selects or requests a group of stocks from the database (e.g., Ford database) to search. While the '286 patent specification explains that the selection of the stocks may consist of the stocks in

² As another example, under the category of **Dividend Data**, the database lists four types of information that it maintains on companies:

44. Dividend (\$ per share) at the current indicated annual rate.
45. Dividend payout ratio, equal to indicated dividend divided by normal earnings.
46. Current dividend yield in percent.
47. Total return estimate (Ford's growth rate estimate plus current field), in percent per year.

As Appellant's representative explained at the Hearing, even novice investors consider data like items 44 and 45 above when making investment selections. Once skilled artisans, upon review of the '286 patent, appreciate that there is value in relating the buyback ratio to another performance factor like price/earnings ratios, it is certainly within the skilled artisan's capabilities to use these types of Dividend Data as alternatives to the price/earnings ratios in establishing an investment portfolio. And the specification does not disclaim or disavow such an alternative. In fact, during prosecution of the application for the '286 patent, the Appellant asserted that consideration of the buyback ratio as part of the selection process distinguished the invention from the prior art, not the consideration of the price/sales and price/earnings ratios.

the S&P 500 or the Dow Jones Industrial Average, the specification also makes clear that these are examples and that **any** selection of stocks may be searched. *Id.*, col. 3, lines 31-37. This too evidences the intended breadth of the disclosure.

The '286 patent specification also discloses that, upon receiving the stock selection request, the system 100 "screens the selection in accordance with selection criteria" that may be provided by a user using a user interface. "The screening step is performed by the various components [using] conventional searching and processing techniques, such as text based searching, data field searching, or the like." *Id.*, col. 3, lines 37-45. Thus, the specification broadly explains that the user specifies "selection criteria" before continuing.

The '286 patent specification then explains--***in the context of a preferred embodiment***--that the "screening criteria" includes "a company's buyback ratio and ***either*** the price/sales ratio or the price/earnings ratio." The specification defines the "buyback ratio" as "the percentage of stocks repurchased by the issuing company over a given period that results in a net percentage decrease of the outstanding shares." *Id.*, col. 3, lines 48-51. The reference here to two alternative factors further evidences the intended breadth of the specification.³

³ It was pointed out at the Hearing that the specification uses the phrase "consists of" in the context of listing the price/sales ratio or the price/earnings ratio as alternatives that may be combined with the buyback ratio ('286 patent, col. 3, line 54), and that this phrase suggests that the inventor might have intended to limit the invention to encompass only a company's buyback ratio and either the price/sales ratio or the price/earnings ratio. As explained, the specification broadly mentions "selection criteria" in addition to using the phrase "consists of." Even when this phrase is used in the specification and claims, it is used in combination with the word "or" as in "consists of X or Y," further demonstrating the Appellant's intent not to limit the scope of the invention. Moreover, Fig. 2, which details the general process and factors to be considered, does not use the phrase "consists of" in connection with steps 230, 232, and 234.

The '286 patent specification also explains how yet another factor used in valuing company performance and stored in the database--i.e., **market capitalization**, is used in one embodiment consistent with the invention.

[C]ompanies within the selection of stocks preferably have a **market capitalization value to identify the value of the company**, and the selection criteria consists of price/sales ratio or price/earnings ratio depending on whether the company value is in the higher or lower half, respectively, of a market capitalization value table preferably stored within database 125. '286 patent, col. 3, lines 51-57.

Accordingly, the specification teaches using "market capitalization values" from the database to screen or select stocks included in a selection.⁴

Moreover, the '286 patent specification explains that "selection criteria" is largely dependent upon the database. That is, the database contains certain information detailing aspects of a company's performance and, as such, the scope and content of the database determines the selection criteria that may be used to screen stocks. Thus, as explained, there are different types of "market capitalization values" stored within the database. Likewise, there are different types of "buyback criteria" stored within the database. '286 patent, col. 4, lines 17-20 ("the user defines the level of buyback that constitutes a valuable selection criteria. This level is based upon buyback criteria stored within database 125."). Buyback criteria may include:

the percentage of outstanding stocks repurchased that cause a decrease in the number of shares outstanding, the average price of stocks repurchased, the overall volume of stocks repurchased during the selected period, the price yield--dividends paid per dollar invested, or price book value, etc. *Id.*, col. 4, lines 22-25.

After detailing these examples of "buyback criteria," the '286 patent specification further broadens the description when noting that "[o]ther factors for selecting the buyback

⁴ Note that "market capitalization," as a factor to be considered as part of the portfolio selection process, is taught separate from the two examples included following the phrase "consists of."

subset are equally within the scope of the present invention.” *Id.*, col. 4, lines 25.-17.

Thus, the ‘286 patent specification starts out broadly describing a process using “selection criteria.” The specification then explains that the preferred criteria to select includes the buyback ratio, the price/earnings ratio or price/sales ratio, and the market capitalization. The specification even discloses using different criteria to select the buyback subset depending on the content of the database. Accordingly, the breadth of the reissue claims is supported by the specification.

IX. CONCLUSION

For the additional reasons explained above, the final rejection of claims 21-81 under 35 U.S.C. § 112, ¶ 1 as failing to comply with the written description requirement should be reversed. There is no clear and unambiguous disavowal of claim scope in the specification as asserted by the Examiner. And unlike *Lizardtech*, the ‘286 patent specification discloses a more generic portfolio selection procedure.

Moreover, as explained in the Appeal Brief, 35 U.S.C. § 112, ¶ 1 does not require that, in this case, the application disclose more than the use of “at least one of price/sales ratio and a price/earnings ratio” and a “buyback ratio” as criteria for screening a selection of stocks to support the appealed independent claims that are not necessarily limited to the specific, disclosed stock selection criteria. Although the Examiner stated that the specification teaches using the price/sales ratio or price/earning ratio with the buyback ratio as selection criteria (*Final Office Action at 4*), the specification as a whole does not limit the invention to using only this selection

criteria. The specification discloses using this selection criteria as one and only one implementation of the invention. As such, the specification supports the use of other selection criteria, which is the subject of the appealed claims.

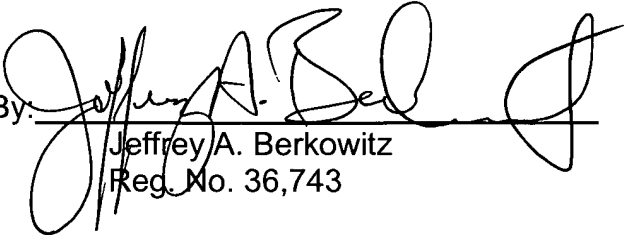
Additionally, the specification fully supports claims 21-81 in that the disclosed price/sales ratio and price/earnings ratio are examples of “selection criteria” and “company performance ratios.”

Lastly, and unlike the facts in *Lizardtech* that include a limiting specification and a prosecution history disclaiming a non-seamless DWT procedure, there is no explicit disclaimer in the specification or file history that would indicate or even suggest that the Appellant chose to limit the invention to only the use of “at least one of price/sales ratio and a price/earnings ratio” and a “buyback ratio” as criteria for screening a selection of stocks. Absent a disclaimer, it is improper to limit the claims in the Appellant’s *invention* in the manner asserted by the Examiner in this case.

To the extent any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this Appeal Brief, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

By: 
Jeffrey A. Berkowitz
Reg. No. 36,743

Dated: December __, 2005

Post Office Address (to
which correspondence is
to be sent)

Finnegan, Henderson, Farabow,
Garrett & Dunner, L.L.P.
901 New York Ave.
Washington, D.C. 20001
(202) 408-4000

Exhibit A

(Excerpt via facsimile; text via hand delivery)

NATIONAL BESTSELLER

**FEATURES
ALL NEW
DATA**

**A GUIDE TO THE
BEST-PERFORMING
INVESTMENT STRATEGIES
OF ALL TIME**

WHAT WORKS ON WALL STREET



REVISED EDITION

JAMES P. O'SHAUGHNESSY

What Works on Wall Street

Other Books by James P. O'Shaughnessy

**INVEST LIKE THE BEST: USING YOUR COMPUTER TO UNLOCK THE
SECRETS OF THE TOP MONEY MANAGERS**

What Works on Wall Street

**A Guide to the Best-Performing
Investment Strategies
of All Time**

James P. O'Shaughnessy

McGraw-Hill

**New York San Francisco Washington, D.C. Auckland Bogotá
Caracas Lisbon London Madrid Mexico City Milan
Montreal New Delhi San Juan Singapore
Sydney Tokyo Toronto**

McGraw-Hill

A Division of The McGraw-Hill Companies



Copyright © 1997 by James P. O'Shaughnessy. All rights reserved. Manufactured in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

0-07-137108-7

The material in this eBook also appears in the print version of this title: 0-07-148246-2.

All trademarks are trademarks of their respective owners. Rather than put a trademark symbol after every occurrence of a trademarked name, we use names in an editorial fashion only, and to the benefit of the trademark owner, with no intention of infringement of the trademark. Where such designations appear in this book, they have been printed with initial caps.

McGraw-Hill eBooks are available at special quantity discounts to use as premiums and sales promotions, or for use in corporate training programs. For more information, please contact George Hoare, Special Sales, at george_hoare@mcgraw-hill.com or (212) 904-4069.

TERMS OF USE

This is a copyrighted work and The McGraw-Hill Companies, Inc. ("McGraw-Hill") and its licensors reserve all rights in and to the work. Use of this work is subject to these terms. Except as permitted under the Copyright Act of 1976 and the right to store and retrieve one copy of the work, you may not decompile, disassemble, reverse engineer, reproduce, modify, create derivative works based upon, transmit, distribute, disseminate, sell, publish or sublicense the work or any part of it without McGraw-Hill's prior consent. You may use the work for your own noncommercial and personal use; any other use of the work is strictly prohibited. Your right to use the work may be terminated if you fail to comply with these terms.

THE WORK IS PROVIDED "AS IS". McGRAW-HILL AND ITS LICENSORS MAKE NO GUARANTEES OR WARRANTIES AS TO THE ACCURACY, ADEQUACY OR COMPLETENESS OF OR RESULTS TO BE OBTAINED FROM USING THE WORK, INCLUDING ANY INFORMATION THAT CAN BE ACCESSED THROUGH THE WORK VIA HYPERLINK OR OTHERWISE, AND EXPRESSLY DISCLAIM ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. McGraw-Hill and its licensors do not warrant or guarantee that the functions contained in the work will meet your requirements or that its operation will be uninterrupted or error free. Neither McGraw-Hill nor its licensors shall be liable to you or anyone else for any inaccuracy, error or omission, regardless of cause, in the work or for any damages resulting therefrom. McGraw-Hill has no responsibility for the content of any information accessed through the work. Under no circumstances shall McGraw-Hill and/or its licensors be liable for any indirect, incidental, special, punitive, consequential or similar damages that result from the use of or inability to use the work, even if any of them has been advised of the possibility of such damages. This limitation of liability shall apply to any claim or cause whatsoever whether such claim or cause arises in contract, tort or otherwise.

DOI: 10.1036/0071371087

To Lael, Kathryn, Patrick, and Melissa

This page intentionally left blank.

Wait for the wisest of all counselors, Time.

—Pericles

This page intentionally left blank.

Contents

Preface	xv
Acknowledgments	xix

1. Stock Investment Strategies: Different Methods, Similar Goals 1

Traditional Active Management Doesn't Work	2
What's the Problem?	5
Studying the Wrong Things	5
Why Indexing Works	6
Pinpointing Performance	6
Discipline Is the Key	8
Consistency Wins	8
A Structured Portfolio in Action	9
Overwhelmed by Our Nature	9

2. The Unreliable Experts: Getting in the Way of Outstanding Performance 11

Human Judgment Is Limited	12
What's the Problem?	13
Why Models Beat Humans	13
Base Rates Are Boring	14
The Individual Versus the Group	15
Personal Experience Preferred	16
Simple Versus Complex	16
A Simple Solution	17

3. Rules of the Game 21

- Short Periods Are Valueless 22
- It's Different This Time 22
- Anecdotal Evidence Is Not Enough 23
- Potential Pitfalls 24
- Rules of the Game 26

4. Ranking Stocks by Market Capitalization: Size Matters 33

- How Much Better? 35
- Reviewing Stocks by Size 39
- All Stocks Is the Winner 40
- Implications for Investors 49
- Our Two Benchmarks 50

5. Price-to-Earnings Ratios: Separating the Winners and Losers 51

- The Results 52
- Large Stocks Are Different 52
- High PE Ratios Are Dangerous 58
- Large Stocks Fare No Better 63
- Implications 64

6. Price-to-Book Ratios: A Better Gauge of Value 69

- The Results 70
- Large Stocks Are Less Volatile 70
- Large Stocks Base Rates More Consistent 72
- High Price-to-Book Stocks Do Poorly 72
- Implications 84

7. Price-to-Cashflow Ratios: Using Cash to Determine Value 87

- The Results 88
- Large Stocks Are Less Volatile 88
- High Price-to-Cashflow Ratios Are Dangerous 94
- Large Stocks Hit Too 94
- Implications 102

8. Price-to-Sales Ratios: The King of the Value Factors 105

- The Results 106
- Large Stocks with Low Price-to-Sales Ratios Do Well 106

High PSR Stocks Are Toxic	106
Large Stocks Do a Little Better	113
Implications	118

9. Dividend Yields: Buying an Income 123

The Results	124
Large Stocks Entirely Different	124
Implications	124

10. The Value of Value Factors 133

Risk Doesn't Always Equal Reward	133
Is It Worth the Risk?	138
Embrace Consistency	138
Large Stocks Are Different	139
Implications	139

11. One-Year Earnings-Per-Share Percentage Changes: Do High Earnings Gains Mean High Performance? 145

Examining Annual Earnings Changes	146
Large Stocks Do Worse	149
Buying Stocks with the Worst Earnings Changes	149
Large Stocks Do Better	149
Implications	156

12. Five-Year Earnings-Per-Share Percentage Changes 161

The Results	161
Large Stocks Are Similar	162
Implications	162

13. Profit Margins: Do Investors Profit from Corporate Profits? 171

The Results	171
Large Stocks Do Slightly Better	172
Implications	172

14. Return on Equity 181

The Results	181
Large Stocks Do a Bit Worse	182
Implications	182

15. Relative Price Strength: Winners Continue to Win 191

- The Results 192
- Large Stocks Also Do Well 195
- Why Price Performance Works While Other Measures Do Not 195
- Buying the Worst-Performing Stocks 195
- Large Stocks Also Hit 198
- Implications 198

16. Using Multifactor Models to Improve Performance 209

- Adding Value Factors 209
- What About Other Value Factors? 210
- Price-to-Sales Ratio Better Still 210
- Additional Factors Add Less to Large Stocks 211
- Price-to-Sales Ratios Still the Champs 217
- What About Growth Factors? 217
- Two Growth Models 222
- Return on Equity Does Better Still 222
- Large Stocks Are Less Dramatic 226
- Implications 226

17. Two Multifactor Value Models for All Stocks 227

- Using Several Value Factors 227
- The Results 228
- Value Factors Overlap 228
- A Multifactor Model Using Price-to-Sales Ratios 228
- Implications 231

**18. Finding Value Among the Market's Leaders:
A Cornerstone Value Strategy 237**

- An Alternative to Indexing 237
- High PE Ratios Hinder Even Market Leaders 238
- Low PE Ratios Help 242
- High Yield Works Better Still 242
- Better in Bull Markets, Too 242
- Implications 244

19. Searching for a Cornerstone Growth Strategy 253

- Traditional Growth Factors Fall Short 254
- Positive Earnings Most Valuable 254
- Uniting the Two Models for a Cornerstone Growth Approach 255
- Growth Strategies Are Less Effective with Large Stocks 264
- Implications 264

20. Uniting Strategies for the Best Risk-Adjusted Performance 267

- The Results 268
- The United Strategy Also Outperforms Large Stocks 268
- Implications 271

21. Ranking the Strategies 279

- The Results 279
- Absolute Returns 280
- Risk 285
- Risk-Adjusted Return 285
- Implications 295

22. Getting the Most out of Your Equity Investments 297

- Always Use Strategies 298
- Use Only Strategies Proven over the Long Term 298
- Invest Consistently 299
- Always Bet with the Base Rate 299
- Never Use the Riskiest Strategies 299
- Always Use More Than One Strategy 299
- Use Multifactor Models 300
- Insist on Consistency 300
- The Stock Market Is Not Random 300

Appendix: Research Methodology 301

- Data 301
- Time Horizon 301
- Universe 301
- Returns 302
- Data Definitions 303
- Formulas 304
- Taxes, Commissions, and Market Impact Costs 306
- Recommended Readings 307

- Index 313

Exhibit B



FORD DATA BASE

The Ford Data Base is a computerized file of financial and market data covering 2680 leading common stocks. The file is updated weekly following the close of business each Friday (except when the file is updated as of the last day of the month.) Data from prior years are retained in a historical file, which covers the period from December 1970 to date.

1. Company name, 16 characters maximum. (NAM)
2. Share price. (PRI)
3. Ticker symbol (or EE number, international data base only). (TKR)
4. Cusip number (or sedol number, international data base only). (CSP)
5. Country code (international data base only). (COU)
6. Industry code (see separate listing). (IND)

STOCK VALUATION DATA

Ford Input:

7. Quality rating assigned by Ford indicating financial strength and earnings predictability, ranging from A+ to C- (or 1 to 9 numerically). B (5) is average. (QTY)
8. Growth persistence rating assigned by Ford indicating past and expected future consistency of earnings growth, ranging from A to D (or 2 to -1 numerically). C (0) is average. (GRP)
9. Current/normal earnings ratio, indicating whether earnings are currently abnormal compared to Ford's estimate of normal earnings. (CNE)
10. Growth rate estimate for earnings and dividends by Ford for the next 10 years in percent per year. (GRO)

Price/Earnings and Cash Flow Data:

11. Current price/earnings ratio using latest reported earnings. ♦ (PEC)
12. Normal price/earnings ratio using Ford's normal earnings estimate. (PER)
13. Normal price/earnings ratio divided by the stock's 5-year average normal P/E. ♦ (PEH)
14. Normal price/earnings ratio divided by the growth rate estimate. (PEG)
15. Price/cash flow per share ratio. ♦ (PCF)

Misc. Value Parameters:

16. Ratio of share price to book value. ♦ (PDK)
17. Share price divided by sales per share. (PSS)
18. Internal rate of return on investment in common stock, found by altering the standard Ford valuation procedure to estimate the investor's rate of return, in percent per year. (ROI)

Ford Valuation Data:

19. Intrinsic value computed by Ford's dividend discount model, in \$ per share. (VAL)
20. Price/value ratio, or current share price divided by intrinsic value, as determined by Ford's dividend discount model. (PVA)
21. Price/value ratio divided by the stock's 5-year average PVA. ♦ (PVH)
22. Price/value ratio relative to the market, i.e. divided by Ford's average PVA. (PVR)
23. Earnings trend (earnings momentum) computed by Ford's earnings trend model (values are limited to +999). (SED)
24. Relative earnings trend, equal to earnings trend divided by historic deviation. (SDR)
25. Composite price/value and earnings trend parameter, found by Ford to yield the best overall performance, equal to PVA-SED/500. (COM)

EARNINGS DATA AND CASH FLOW

26. Current 12 month earnings per share based on latest reported information. (ECU)
27. Normal 12 month earnings per share, which differ from reported earnings when the latter have been affected by non-recurring or cyclical factors. (ENO)
28. Cash flow per share equal to net profit less preferred dividends plus depreciation, depletion, and similar noncash charges, divided by shares outstanding, as of the latest fiscal year-end. (CFL)
29. Earnings variability, equal to the standard deviation of annual earnings from a growth curve over the past eight years, expressed as percent of normal earnings. (EDV)

Quarterly Earnings Series:

30. Earnings series, consisting of 12-month operating earnings per share as of the past four quarters, plus a fifth value including an estimate for the current quarter (i from 1 to 5; 1 is the oldest). (EQi)
35. Earnings series, consisting of quarterly operating earnings per share for the past seven quarters, plus an estimate for the current quarter (i from 1 to 8; 1 is the oldest). (QEi)
43. Month and year of latest earnings report (e.g. 1293). (MFQ)

(continued)

DIVIDEND DATA

44. Dividend (\$ per share) at the current indicated annual rate. (DIV)
 45. Dividend payout ratio, equal to indicated dividend divided by normal earnings. (DPR)
 46. Current dividend yield in percent. (YLD)
 47. Total return estimate (Ford's growth rate estimate plus current yield), in percent per year. (RET)

COMPANY FINANCIAL PERFORMANCE

48. Net profit margin on sales, calculated as normal earnings available to common shareholders divided by sales, as of the latest fiscal year-end, in percent. (NPS)
 49. Return on assets, calculated as normal earnings available to common shareholders divided by total assets, as of the latest fiscal year-end in percent. (ROA)
 50. Return on equity, equal to normal earnings available to common shareholders divided by common equity, in percent. ROE is updated monthly, along with earnings and book value. ♦ (ROE)
 51. Reinvestment (plowback) on equity, equal to normal earnings less dividends as a percent of common stockholders equity, updated monthly. ♦ (PLB)

FIVE YEAR HISTORICAL DATA**Growth: %**

52. 5-year reported earnings per share growth rate. (In percent per year.) (HEG)
 53. 5-year sales (revenue) growth rate, in percent per year. (HSG)
 54. 5-year dividend growth rate, in percent per year. (HDG)

PE and Price/Value History: %

55. Extreme high P/E ratio using normal earnings. (HPE)
 56. Average P/E ratio using normal earnings. (APE)
 57. Extreme low P/E ratio using normal earnings. (LPE)
 58. Average price/value ratio. (HPV)

SHARE PRICE HISTORY

59. Previous month-end share price, adjusted for stock dividends and splits. (PRO)
 60. Price gain since last month-end in percent. (PGN)
 61. -Percent price gains since the month-end (-99.9 indicates old prices not available):
 3 months ago (PGQ)
 6 months ago (PGH)
 12 months ago (PGY)
 Year to date (PGD)
 65. Previous 5 year price gain, in percent per year. % (PGF)
 66. Previous 5 year total return (price gain plus yield) in percent per year. % (REF)
 67. Beta (price sensitivity to market, based on monthly price changes relative to the S&P 500 Index over the past 60 months). (BET)
 68. Daily trading volume, averaged over past 3 months, in 100's. (VOL)

69. Price momentum, from Ford's momentum model. (PRM)

SALES, CAPITALIZATION, & OWNERSHIP

70. Company annual sales (revenue) for the last fiscal year, in \$ millions. (SAL)

Shares, Inst. Holdings, Market Cap.:

71. Common shares outstanding, in millions. (SHR)
 72. Shares held by institutions, in percent. (FND)
 73. Market capitalization (total market value of common stock outstanding), in \$ millions. (CAP)

Equity and Liabilities: (as of the latest fiscal year-end.)

74. Book value per share adjusted monthly for earnings plowback. (BKV)
 75. Preferred equity, as a percent of assets. (PEQ)
 76. Common equity, as a percent of assets. (CEQ)
 77. Long term debt, as a percent of assets. □ (LTD)
 78. Other debt, liabilities, etc., as a percent of assets. □ (ODL)
 79. Total assets, in \$ million. (ASS)
 80. Month and year of latest fiscal year report (e.g. 1293) (MFY)

DEBT RATIOS*(as of the latest fiscal year-end)*

81. Current ratio (current assets divided by current liabilities). (CCR)
 82. Long term debt/equity ratio, using common plus preferred equity (maximum value is 9.99; 9.99 is also used if equity is negative). (DEQ)
 83. Total debt/asset ratio (where total debt includes all liabilities, not including preferred or common equity). (DAS)

VARIOUS INDICATORS*(see separate list of codes)*

84. Change symbol, indicating a change within the month which deserves attention. (CHI)
 85. Screening aid indicating when price/value, earnings trend, or their composite parameter is in the top 10%. Only stocks with quality ratings of B- or better qualify. (VEI)
 86. Foreign-based company indicator. (FNI)
 87. Options indicator, for stocks with listed options. (OPI)
 88. Exchange indicator, denoting exchange where traded (may be traded on other exchanges also). (EXI)
 89. Indicator when included in the DJIA, S&P 500, or Value Line averages. (AVI)
 90. S&P MidCap 400 indicator. (MCI)
 91. Ford Buy/Sell/Hold indicator. (BHS)
 92. Primary versus fully diluted earnings per share indicator. (FDI)
 93. Indicator when fiscal year data are estimated, due to merger, spinoff, or other restructuring. (YEI)

- ♦ If the denominator is negative, the number 99.9 (or 9.99 for PBK) is used.
 * An extreme number (e.g. 99.9 or -99.9) is used if five years are unavailable.
 □ An extreme number (e.g. 99.9) is used if common equity is negative.

Ford Value Graphs

DEFINITIONS

Ford Value Graphs:

Company Name

Ticker Symbol

Industry - Ford has 88 industry classifications

Date of Graph Update

Valuation Ratios vs. 5 yr. Hi/Low (3 year Hi/Low if 5 year not available)

P/E: Stock price divided by trailing twelve-month operating earnings.

Highest P/E ratio in past 5 years.

Current P/E ratio using latest reported earnings and current price.

Lowest P/E ratio in past 5 years.

P/CF: Stock price divided by cash flow generated in latest fiscal year.

Highest P/CF ratio in past 5 years.

Current P/CF using latest fiscal year cash flow and current price.

Lowest P/CF ratio in past 5 years.

P/BV: Stock price divided by latest book value per share.

Highest P/BV ratio in past 5 years.

Current P/BV using latest book value and current price.

Lowest P/BV ratio in past 5 years.

P/Sales: Stock price divided by sales (revenues) per share in latest fiscal year.

Highest P/Sales ratio in past 5 years.

Current P/Sales using latest fiscal sales (revenue) and current price.

Lowest P/Sales ratio in past 5 years.

P/Value: Stock price divided by company's intrinsic value, from Ford's dividend discount model.

Highest P/Value ratio in past 5 years.

Current P/Value using latest intrinsic value and current price.

Lowest P/Value ratio in past 5 years.

Sales Growth:

5 yr: Five-year sales (revenue) growth rate, in percent per year, compared to its industry group average (see below for "industry group" definition).

12 mo: Latest twelve month sales (revenue) compared to the prior 12 month sales, in percent, compared to its industry group average.

Last Qtr: Latest quarter's sales (revenue) compared to same quarter of prior year, in percent, compared to its industry group average.

Earnings Growth:

5 yr: Five-year earnings per share growth rate, in percent per year, compared to its industry group average.

12 mo: Latest twelve month earnings per share compared to prior twelve months, in percent, compared to its industry group average.

Last qtr: Latest quarter's earnings per share compared to the same quarter of prior year, in percent, compared to its industry group average.

1 yr est: Current fiscal year consensus estimate (FY1) compared to the last fiscal year EPS, in percent, compared to its industry group average.

2 yr est: Next fiscal year consensus estimate (FY2) compared to current fiscal year estimate (FY1), in percent, compared to its industry group average.

FORD Value Graphs

DEFINITIONS

Price Graph:

Monthly high, low and close (split and spin-off adjusted).

Dotted Line: Monthly per share intrinsic value of company as determined by Ford's dividend discount model.

Solid Line Band: Valuation bands based on the highest and lowest P/E ratio in the past five years applied to the trailing 12 month operating earnings, then to the FY1 and FY2 earnings estimates.

Volume Graph:

Volume (10000s): Monthly Volume in units of 10,000 shares.

Fiscal Year End Fundamental Data for Five Years

Fiscal Yr End: Month and year of each fiscal year end.

Sales: Fiscal year sales (revenues), in \$ millions.

EPS: Fiscal year earnings per share, in \$ millions.

Net Profit on Sales: Net profit margin calculated as fiscal year reported earnings (see definition below) divided by fiscal year sales, in percent.

Cash Flow/Share: Fiscal year net profit less preferred dividends plus depreciation, depletion, and similar non cash charges, divided by shares outstanding.

Book Value/Share: Common Shareholders equity at fiscal year end, divided by shares outstanding.

Return on Equity: Reported earnings available to common shareholders divided by common equity in percent.

Debt to Equity: Long term debt divided by common plus preferred equity.

Consensus Earnings Estimates (from FirstCall)

Fiscal Years: Year and month of fiscal year end for estimate.

EPS: Earnings per share estimates for current fiscal year (FY1) and next fiscal year (FY2).

% Chg: Current fiscal year estimate (FY1) compared to prior fiscal reported earnings per share, in percent. Next fiscal year estimate (FY2) compared to current fiscal year estimate (FY1), in percent.

Current Data

Current Price: Closing price for date of graph update.

Market Capitalization (mil): Total market value of common stock outstanding, in \$ millions.

Common Shares Out (mil): Common shares outstanding, in \$ millions.

Shares Held by Institutions: Shares held by institutions, in percent of shares outstanding.

Average Daily Volume (100s): Daily trading volume, averaged over past 3 months, in 100's.

Beta: Price sensitivity to market, based on monthly price changes relative to the S&P 500 Index over the past 60 months.

Exchange: Principal exchange where traded (may be traded on other exchanges also).

Options Trading: Indicates whether stock has listed options.

Earnings, Cash Flow, & Dividends

Latest Qtr. Report: Month and year of latest earnings report (e.g. 1998/04).

12-Mo Sales (mil): Sales consisting of 12 month sales (revenues) for the past four quarters, in \$ millions.

12-Mo EPS: Current 12 month earnings per share based on latest reported information, but excluding extraordinary items.

12-Mo Operating EPS: 12-month earnings per share excluding all non-recurring items.

Cash Flow/Share (FY): Cash flow per share, equal to net profit less preferred dividends plus depreciation, depletion, and similar non-cash charges, divided by shares outstanding, as of the latest fiscal year-end.

Annual Dividend: Dividend per share at the current indicated annual rate.

Dividend Payout Ratio: Dividend payout ratio, equal to indicated dividend divided by normal earnings (see definition below).

Dividend Yield: Current dividend yield in percent.

FORD Value Graphs

DEFINITIONS

Ford Evaluations: (based on Ford proprietary models and evaluations).

Quality Rating: Quality rating assigned by Ford indicating financial strength and earnings predictability, ranging from A+ to C-. B is average.

Growth Persistence Rating: Growth persistence rating assigned by Ford indicating past and expected future consistency of earnings growth, ranging from A to D. C is average.

Projected Growth Rate: Growth rate estimate for earnings and dividends by Ford for the next 10 years in percent per year.

Ford DDM Value: Intrinsic value per share, as determined by Ford's dividend discount model.

Price to Value Ratio (PVA): Price/value ratio, or current share price divided by intrinsic value, as determined by Ford's dividend discount model.

PVA/5 Yr. Average: Price/value ratio divided by the stock's 5-year average price/value ratio.

PVA Relative to Market: Price/value ratio relative to the market, i.e. divided by the average PVA for Ford's universe.

Sales Momentum Percentile: measures the acceleration or deceleration in sales growth for 12-month sales ending in each of the last 5 quarters.

Share Buyback: Share buyback/issuance, equal to percent change in shares outstanding from 12 months ago.

Normal Earnings: Normal 12 month earnings per share, which differ from reported earnings when the latter have been affected by non-recurring or cyclical effect; i.e., the earnings per share which the company should be realizing under normal or typical conditions.

Price/Normal Earnings: Price to earnings ratio using Ford's normal earnings as the denominator.

Value/Momentum Model

Value/Momentum Percentile: Combines relative value with acceleration of earnings growth and price momentum. Earnings yield based on Fords operating earnings for the trailing three quarters and the current quarter estimate; Fords Earnings Momentum Percentile, and Fords Price Momentum Percentile are combined as a multi factor model producing superior results using quarterly, six monthly and twelve month holding periods (percentile, 100 best).

Operating Earnings Yield: Earnings yield in percent, calculated by dividing the 12 month operating earnings per share including an estimate for the current quarter by the share price as of the data base date. In percent.

Earnings Momentum Percentile: Measures the acceleration or deceleration of earnings growth by adjusting earnings trend for the volatility of earnings (percentile, 100 best).

Price Momentum Percentile: Twelve-month price performance adjusted for latest quarter and latest month performance (percentile, 100 best).

Industry Group: A group of 3 to 8 companies within the same industry and having similar product lines, markets, and/or company size.

Name of company and ticker symbol.

Price: Closing price for date of graph update.

P/E: Price to earnings ratio based on trailing twelve-month earnings.

FORD Industry Value Graphs

GROWTH DEFINITIONS

Industry Group: Subset of Three to eight companies in a Ford industry classification whose primary business and volume of sales (revenue) are similar.

Date: Month, day, and year of graph update.

Page Number: 1 of 3

Company: Name of company and ticker symbol.

Market Cap (mil): Total market value of common stock outstanding, in \$ millions.

Sales (mil): Sales (revenue) for the past four quarters in \$ millions.

5-Yr Dividend Growth: Five-year dividend growth rate for each company in industry group, in percent per year.

Consensus Projected Growth: FirstCall consensus estimated future growth rate for each company in industry group.

5-Yr EPS Growth: Five-year reported earnings per share growth rate for each company in industry group, in percent per year.

12-Mo EPS Growth: Latest twelve-month operating earnings per share compared to prior twelve months for each company in industry group, in percent.

Last Qtr EPS Growth: Latest quarter's operating earnings per share compared to the same quarter of prior year for each company in industry group, in percent.

5-Yr Sales Growth: Five year sales (revenue) growth rate for each company in industry group, in percent per year.

12-Mo Sales Growth: Latest twelve-month sales (revenue) compared to the prior twelve-month sales for each company in industry group, in percent.

Last Qtr Sales Growth: Latest quarter's sales (revenue) compared to same quarter of prior year for each company in industry group, in percent.

FORD Industry Value Graphs

VALUATION AND RETURN-DEFINITIONS

Industry Group: Subset of three to eight companies in a Ford industry classification, whose primary business and volume of sales (revenue) are similar.

Date: Month, date and year of graph update.

Page Number: 2 of 3

Company: Name of company and ticker symbol.

Price: Price of company as of date of graph update.

Volume (100s): Daily trading volume, averaged over past 3 months, in 100's.

3-Mo Price Gain (%): Percent price gain since the month-end 3 months ago.

12-Mo Price Gain (%): Percent price gain since the month-end 12 months ago.

5-Yr Price Gain (Annual %): Previous 5-year price gain in percent per year.

5-Yr Total Return (Annual %): Previous 5-year total return (price gain plus yield) in percent per year.

Beta: Beta for each company in industry group (price sensitivity to market, based on monthly price changes relative to the S&P 500 Index over the past 60 months).

Price/Earnings 5-yr Hi/Low: Stock price divided by trailing twelve-month operating earnings for each industry group company.

Highest P/E ratio in past 5 years (3 years used if 5 years not available).

Current P/E using latest reported operating earnings and current price.

Lowest P/E ratio in past 5 years (3 years used if 5 years not available).

Price/Book 5-Yr Hi/Low: Stock price divided by the latest book value per share for each industry group company.

Highest P/BV ratio in past 5 years (3 years used if 5 years not available).

Current P/BV using latest book value and current price.

Lowest P/BV ratio in past 5 years (3 years used if 5 years not available).

Price/Sales 5-yr Hi/Low: Stock price divided by sales (revenue) per share in latest fiscal year, for each industry group company.

Highest P/Sales ratio in past 5 years (3 years used if 5 years not available).

Current P/Sales using latest fiscal sales (revenue) and current price.

Lowest P/Sales ratio in past 5 years (3 years used if 5 years not available).

Return on Equity: Operating earnings available to common shareholders divided by common equity, in percent, for each industry group company.

Shares Held By Institutions: Shares held by institutions, in percent, for each industry group company.

Long-term Debt/Equity: Long term debt divided by common plus preferred equity, for each industry group company.

FORD Industry Value Graphs

FORD EVALUATIONS-DEFINITIONS

Industry Group: Subset of Three to eight companies in a Ford industry classification whose primary business and volume of sales (revenue) are similar.

Date: Month, day, and year of graph update.

Page Number: 3 of 3

Company: Name of company and ticker symbol.

Quality Rating: Quality rating assigned by Ford indicating financial strength and earnings predictability, ranging from A+ to C-. B is average.

Growth Persist: Growth persistence rating assigned by Ford indicating past and expected future consistency of earnings growth, ranging from A to D. C is average.

Current 12-Mo EPS: Current 12-month earnings per share based on latest reported information.

Latest 12-Mo Op EPS: 12-month earnings per share excluding all non-recurring items.

Normal 12-Mo EPS: Normal 12-month earnings per share, which differ from reported earnings when the latter have been affected by non-recurring or cyclical factors.

Earnings Variability: Equal to the standard deviation of annual earnings from a growth curve over the past eight years, expressed as a percent of normal earnings.

Price/Value 5-Yr Hi/Low: Stock price divided by company's intrinsic value, from Ford's dividend discount model.

Highest P/Value ratio in past 5 years.

Current P/Value using latest intrinsic value and current price.

Lowest P/Value ratio in past 5 years.

Ford Projected Growth Rate: Growth rate estimate for earnings and dividends by Ford for the next 10 years in percent per year.

Earnings Momentum: Measures the acceleration or deceleration of earnings growth by adjusting earnings trend for the volatility of earnings (percentile, 100 best).

Sales Momentum: Measures the acceleration or deceleration in sales (revenue) growth for the 12 month sales ending in each of the last 5 quarters (percentile, 100 best).

Price Momentum: Twelve-month price performance adjusted for latest quarter and latest month performance (percentile, 100 best).

Value Momentum: Combines relative value with acceleration of earnings growth and price momentum. Earnings yield based on Fords operating earnings for the trailing three quarters and the current quarter estimate; Fords Earnings Momentum Percentile, and Fords Price Momentum Percentile are combined as a multi factor model producing superior results using quarterly, six monthly and twelve month holding periods (percentile, 100 best).

Share buyback/Issuance (12-Mo Share Change): Share buyback/issuance, equal to percent change in shares outstanding from 12 months ago.

Exhibit A

(Excerpt via facsimile; text via hand delivery)

NATIONAL BESTSELLER

**FEATURES
ALL NEW
DATA**

**A GUIDE TO THE
BEST-PERFORMING
INVESTMENT STRATEGIES
OF ALL TIME**

WHAT WORKS ON WALL STREET



REVISED EDITION

JAMES P. O'SHAUGHNESSY

What Works on Wall Street

Other Books by James P. O'Shaughnessy

**INVEST LIKE THE BEST: USING YOUR COMPUTER TO UNLOCK THE
SECRETS OF THE TOP MONEY MANAGERS**

What Works on Wall Street

**A Guide to the Best-Performing
Investment Strategies
of All Time**

James P. O'Shaughnessy

McGraw-Hill

**New York San Francisco Washington, D.C. Auckland Bogotá
Caracas Lisbon London Madrid Mexico City Milan
Montreal New Delhi San Juan Singapore
Sydney Tokyo Toronto**

McGraw-Hill

A Division of The McGraw-Hill Companies



Copyright © 1997 by James P. O'Shaughnessy. All rights reserved. Manufactured in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

0-07-137108-7

The material in this eBook also appears in the print version of this title: 0-07-148246-2.

All trademarks are trademarks of their respective owners. Rather than put a trademark symbol after every occurrence of a trademarked name, we use names in an editorial fashion only, and to the benefit of the trademark owner, with no intention of infringement of the trademark. Where such designations appear in this book, they have been printed with initial caps.

McGraw-Hill eBooks are available at special quantity discounts to use as premiums and sales promotions, or for use in corporate training programs. For more information, please contact George Hoare, Special Sales, at george_hoare@mcgraw-hill.com or (212) 904-4069.

TERMS OF USE

This is a copyrighted work and The McGraw-Hill Companies, Inc. ("McGraw-Hill") and its licensors reserve all rights in and to the work. Use of this work is subject to these terms. Except as permitted under the Copyright Act of 1976 and the right to store and retrieve one copy of the work, you may not decompile, disassemble, reverse engineer, reproduce, modify, create derivative works based upon, transmit, distribute, disseminate, sell, publish or sublicense the work or any part of it without McGraw-Hill's prior consent. You may use the work for your own noncommercial and personal use; any other use of the work is strictly prohibited. Your right to use the work may be terminated if you fail to comply with these terms.

THE WORK IS PROVIDED "AS IS". MCGRAW-HILL AND ITS LICENSORS MAKE NO GUARANTEES OR WARRANTIES AS TO THE ACCURACY, ADEQUACY OR COMPLETENESS OF OR RESULTS TO BE OBTAINED FROM USING THE WORK, INCLUDING ANY INFORMATION THAT CAN BE ACCESSED THROUGH THE WORK VIA HYPERLINK OR OTHERWISE, AND EXPRESSLY DISCLAIM ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. McGraw-Hill and its licensors do not warrant or guarantee that the functions contained in the work will meet your requirements or that its operation will be uninterrupted or error free. Neither McGraw-Hill nor its licensors shall be liable to you or anyone else for any inaccuracy, error or omission, regardless of cause, in the work or for any damages resulting therefrom. McGraw-Hill has no responsibility for the content of any information accessed through the work. Under no circumstances shall McGraw-Hill and/or its licensors be liable for any indirect, incidental, special, punitive, consequential or similar damages that result from the use of or inability to use the work, even if any of them has been advised of the possibility of such damages. This limitation of liability shall apply to any claim or cause whatsoever whether such claim or cause arises in contract, tort or otherwise.

DOI: 10.1036/0071371087

To Lael, Kathryn, Patrick, and Melissa

This page intentionally left blank.

Wait for the wisest of all counselors, Time.

—Pericles

This page intentionally left blank.

Contents

Preface	xv
Acknowledgments	xix

1. Stock Investment Strategies: Different Methods, Similar Goals 1

Traditional Active Management Doesn't Work	2
What's the Problem?	5
Studying the Wrong Things	5
Why Indexing Works	6
Pinpointing Performance	6
Discipline Is the Key	8
Consistency Wins	8
A Structured Portfolio in Action	9
Overwhelmed by Our Nature	9

2. The Unreliable Experts: Getting in the Way of Outstanding Performance 11

Human Judgment Is Limited	12
What's the Problem?	13
Why Models Beat Humans	13
Base Rates Are Boring	14
The Individual Versus the Group	15
Personal Experience Preferred	16
Simple Versus Complex	16
A Simple Solution	17

3. Rules of the Game 21

- Short Periods Are Valueless 22
- It's Different This Time 22
- Anecdotal Evidence Is Not Enough 23
- Potential Pitfalls 24
- Rules of the Game 26

4. Ranking Stocks by Market Capitalization: Size Matters 33

- How Much Better? 35
- Reviewing Stocks by Size 39
- All Stocks Is the Winner 40
- Implications for Investors 49
- Our Two Benchmarks 50

5. Price-to-Earnings Ratios: Separating the Winners and Losers 51

- The Results 52
- Large Stocks Are Different 52
- High PE Ratios Are Dangerous 58
- Large Stocks Fare No Better 63
- Implications 64

6. Price-to-Book Ratios: A Better Gauge of Value 69

- The Results 70
- Large Stocks Are Less Volatile 70
- Large Stocks Base Rates More Consistent 72
- High Price-to-Book Stocks Do Poorly 72
- Implications 84

7. Price-to-Cashflow Ratios: Using Cash to Determine Value 87

- The Results 88
- Large Stocks Are Less Volatile 88
- High Price-to-Cashflow Ratios Are Dangerous 94
- Large Stocks Hit Too 94
- Implications 102

8. Price-to-Sales Ratios: The King of the Value Factors 105

- The Results 106
- Large Stocks with Low Price-to-Sales Ratios Do Well 106

High PSR Stocks Are Toxic	106
Large Stocks Do a Little Better	113
Implications	118

9. Dividend Yields: Buying an Income 123

The Results	124
Large Stocks Entirely Different	124
Implications	124

10. The Value of Value Factors 133

Risk Doesn't Always Equal Reward	133
Is It Worth the Risk?	138
Embrace Consistency	138
Large Stocks Are Different	139
Implications	139

11. One-Year Earnings-Per-Share Percentage Changes: Do High Earnings Gains Mean High Performance? 145

Examining Annual Earnings Changes	146
Large Stocks Do Worse	149
Buying Stocks with the Worst Earnings Changes	149
Large Stocks Do Better	149
Implications	156

12. Five-Year Earnings-Per-Share Percentage Changes 161

The Results	161
Large Stocks Are Similar	162
Implications	162

13. Profit Margins: Do Investors Profit from Corporate Profits? 171

The Results	171
Large Stocks Do Slightly Better	172
Implications	172

14. Return on Equity 181

The Results	181
Large Stocks Do a Bit Worse	182
Implications	182

15. Relative Price Strength: Winners Continue to Win 191

- The Results 192
- Large Stocks Also Do Well 195
- Why Price Performance Works While Other Measures Do Not 195
- Buying the Worst-Performing Stocks 195
- Large Stocks Also Hit 198
- Implications 198

16. Using Multifactor Models to Improve Performance 209

- Adding Value Factors 209
- What About Other Value Factors? 210
- Price-to-Sales Ratio Better Still 210
- Additional Factors Add Less to Large Stocks 211
- Price-to-Sales Ratios Still the Champs 217
- What About Growth Factors? 217
- Two Growth Models 222
- Return on Equity Does Better Still 222
- Large Stocks Are Less Dramatic 226
- Implications 226

17. Two Multifactor Value Models for All Stocks 227

- Using Several Value Factors 227
- The Results 228
- Value Factors Overlap 228
- A Multifactor Model Using Price-to-Sales Ratios 228
- Implications 231

**18. Finding Value Among the Market's Leaders:
A Cornerstone Value Strategy 237**

- An Alternative to Indexing 237
- High PE Ratios Hinder Even Market Leaders 238
- Low PE Ratios Help 242
- High Yield Works Better Still 242
- Better in Bull Markets, Too 242
- Implications 244

19. Searching for a Cornerstone Growth Strategy 253

- Traditional Growth Factors Fall Short 254
- Positive Earnings Most Valuable 254
- Uniting the Two Models for a Cornerstone Growth Approach 255
- Growth Strategies Are Less Effective with Large Stocks 264
- Implications 264

20. Uniting Strategies for the Best Risk-Adjusted Performance 267

- The Results 268
- The United Strategy Also Outperforms Large Stocks 268
- Implications 271

21. Ranking the Strategies 279

- The Results 279
- Absolute Returns 280
- Risk 285
- Risk-Adjusted Return 285
- Implications 295

22. Getting the Most out of Your Equity Investments 297

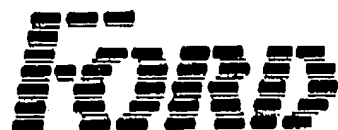
- Always Use Strategies 298
- Use Only Strategies Proven over the Long Term 298
- Invest Consistently 299
- Always Bet with the Base Rate 299
- Never Use the Riskiest Strategies 299
- Always Use More Than One Strategy 299
- Use Multifactor Models 300
- Insist on Consistency 300
- The Stock Market Is Not Random 300

Appendix: Research Methodology 301

- Data 301
- Time Horizon 301
- Universe 301
- Returns 302
- Data Definitions 303
- Formulas 304
- Taxes, Commissions, and Market Impact Costs 306
- Recommended Readings 307

Index 313

Exhibit B



INVESTOR SERVICES, INC.

FORD DATA BASE

The Ford Data Base is a computerized file of financial and market data covering 2680 leading common stocks. The file is updated weekly following the close of business each Friday (except when the file is updated as of the last day of the month.) Data from prior years are retained in a historical file, which covers the period from December 1970 to date.

1. Company name, 16 characters maximum. (NAM)
2. Share price. (PRI)
3. Ticker symbol (or EE number, international data base only). (TKR)
4. Cusip number (or sedol number, international data base only). (CSP)
5. Country code (international data base only). (COU)
6. Industry code (see separate listing). (IND)

STOCK VALUATION DATA

Ford Input:

7. Quality rating assigned by Ford indicating financial strength and earnings predictability, ranging from A+ to C- (or 1 to 9 numerically). B (5) is average. (QTY)
8. Growth persistence rating assigned by Ford indicating past and expected future consistency of earnings growth, ranging from A to D (or 2 to -1 numerically). C (0) is average. (GRP)
9. Current/normal earnings ratio, indicating whether earnings are currently abnormal compared to Ford's estimate of normal earnings. (CNE)
10. Growth rate estimate for earnings and dividends by Ford for the next 10 years in percent per year. (GRO)

Price/Earnings and Cash Flow Data:

11. Current price/earnings ratio using latest reported earnings. ♦ (PEC)
12. Normal price/earnings ratio using Ford's normal earnings estimate. (PER)
13. Normal price/earnings ratio divided by the stock's 5-year average normal P/E. % (PEH)
14. Normal price/earnings ratio divided by the growth rate estimate. (PEG)
15. Price/cash flow per share ratio. ♦ (PCF)

Misc. Value Parameters:

16. Ratio of share price to book value. ♦ (PBK)
17. Share price divided by sales per share. (PSS)
18. Internal rate of return on investment in common stock, found by altering the standard Ford valuation procedure to estimate the investor's rate of return, in percent per year. (ROI)

Ford Valuation Data:

19. Intrinsic value computed by Ford's dividend discount model, in \$ per share. (VAL)
20. Price/value ratio, or current share price divided by intrinsic value, as determined by Ford's dividend discount model. (PVA)
21. Price/value ratio divided by the stock's 5-year average PVA. % (PVH)
22. Price/value ratio relative to the market, i.e. divided by Ford's average PVA. (PVR)
23. Earnings trend (earnings momentum) computed by Ford's earnings trend model (values are limited to +999). (SED)
24. Relative earnings trend, equal to earnings trend divided by historic deviation. (SDR)
25. Composite price/value and earnings trend parameter, found by Ford to yield the best overall performance, equal to PVA-SED/500. (COM)

EARNINGS DATA AND CASH FLOW

26. Current 12 month earnings per share based on latest reported information. (ECU)
27. Normal 12 month earnings per share, which differ from reported earnings when the latter have been affected by non-recurring or cyclical factors. (ENO)
28. Cash flow per share equal to net profit less preferred dividends plus depreciation, depletion, and similar noncash charges, divided by shares outstanding, as of the latest fiscal year-end. (CFL)
29. Earnings variability, equal to the standard deviation of annual earnings from a growth curve over the past eight years, expressed as percent of normal earnings. (EDV)

Quarterly Earnings Series:

30. Earnings series, consisting of 12-month operating earnings per share as of the past four quarters, plus a fifth value including an estimate for the current quarter (i from 1 to 5; 1 is the oldest). (EQi)
35. Earnings series, consisting of quarterly operating earnings per share for the past seven quarters, plus an estimate for the current quarter (i from 1 to 8; 1 is the oldest). (QEi)
43. Month and year of latest earnings report (e.g. 1293). (MFQ)

(continued)

DIVIDEND DATA

44. Dividend (\$ per share) at the current indicated annual rate. (DIV)
 45. Dividend payout ratio, equal to indicated dividend divided by normal earnings. (DPR)
 46. Current dividend yield in percent. (YLD)
 47. Total return estimate (Ford's growth rate estimate plus current yield), in percent per year. (RET)

COMPANY FINANCIAL PERFORMANCE

48. Net profit margin on sales, calculated as normal earnings available to common shareholders divided by sales, as of the latest fiscal year-end, in percent. (NPS)
 49. Return on assets, calculated as normal earnings available to common shareholders divided by total assets, as of the latest fiscal year-end in percent. (ROA)
 50. Return on equity, equal to normal earnings available to common shareholders divided by common equity, in percent. ROE is updated monthly, along with earnings and book value. ♦ (ROE)
 51. Reinvestment (plowback) on equity, equal to normal earnings less dividends as a percent of common stockholders equity, updated monthly. ♦ (PLB)

FIVE YEAR HISTORICAL DATA**Growth: %**

52. 5-year reported earnings per share growth rate. (In percent per year.) (HEG)
 53. 5-year sales (revenue) growth rate, in percent per year. (HSG)
 54. 5-year dividend growth rate, in percent per year. (HDG)

PE and Price/Value History: %

55. Extreme high P/E ratio using normal earnings. (HPE)
 56. Average P/E ratio using normal earnings. (APE)
 57. Extreme low P/E ratio using normal earnings. (LPE)
 58. Average price/value ratio. (HPV)

SHARE PRICE HISTORY

59. Previous month-end share price, adjusted for stock dividends and splits. (PRO)
 60. Price gain since last month-end in percent. (PGN)
 61. Percent price gains since the month-end (-99.9 indicates old prices not available):
 3 months ago (PGQ)
 6 months ago (PGH)
 12 months ago (PGY)
 Year to date (PGD)
 65. Previous 5 year price gain, in percent per year. % (PGF)
 66. Previous 5 year total return (price gain plus yield) in percent per year. % (REF)
 67. Beta (price sensitivity to market, based on monthly price changes relative to the S&P 500 Index over the past 60 months). (BET)
 68. Daily trading volume, averaged over past 3 months, in 100's. (VOL)

69. Price momentum, from Ford's momentum model. (PRM)

SALES, CAPITALIZATION, & OWNERSHIP

70. Company annual sales (revenue) for the last fiscal year, in \$ millions. (SAL)

Shares, Inst. Holdings, Market Cap.:

71. Common shares outstanding, in millions. (SHR)
 72. Shares held by institutions, in percent. (FND)
 73. Market capitalization (total market value of common stock outstanding), in \$ millions. (CAP)

Equity and Liabilities: (as of the latest fiscal year-end.)

74. Book value per share adjusted monthly for earnings plowback. (BKV)
 75. Preferred equity, as a percent of assets. (PEQ)
 76. Common equity, as a percent of assets. (CEQ)
 77. Long term debt, as a percent of assets. □ (LTD)
 78. Other debt, liabilities, etc., as a percent of assets. □ (ODL)
 79. Total assets, in \$ million. (ASS)
 80. Month and year of latest fiscal year report (e.g. 1293) (MFY)

DEBT RATIOS*(as of the latest fiscal year-end)*

81. Current ratio (current assets divided by current liabilities). (CCR)
 82. Long term debt/equity ratio, using common plus preferred equity (maximum value is 9.99; 9.99 is also used if equity is negative). (DEQ)
 83. Total debt/asset ratio (where total debt includes all liabilities, not including preferred or common equity). (DAS)

VARIOUS INDICATORS*(see separate list of codes)*

84. Change symbol, indicating a change within the month which deserves attention. (CHI)
 85. Screening aid indicating when price/value, earnings trend, or their composite parameter is in the top 10%. Only stocks with quality ratings of B- or better qualify. (VEI)
 86. Foreign-based company indicator. (FNI)
 87. Options indicator, for stocks with listed options. (OPI)
 88. Exchange indicator, denoting exchange where traded (may be traded on other exchanges also). (EXI)
 89. Indicator when included in the DJIA, S&P 500, or Value Line averages. (AVI)
 90. S&P MidCap 400 indicator. (MCI)
 91. Ford Buy/Sell/Hold indicator. (BHS)
 92. Primary versus fully diluted earnings per share indicator. (FDI)
 93. Indicator when fiscal year data are estimated, due to merger, spinoff, or other restructuring. (YEI)

- ♦ If the denominator is negative, the number 99.9 (or 9.99 for PBK) is used.
 * An extreme number (e.g. 99.9 or -99.9) is used if five years are unavailable.
 □ An extreme number (e.g. 99.9) is used if common equity is negative.

FORD Value Graphs

DEFINITIONS

Ford Value Graphs:

Company Name

Ticker Symbol

Industry - Ford has 88 industry classifications

Date of Graph Update

Valuation Ratios vs. 5 yr. Hi/Low (3 year Hi/Low if 5 year not available)

- P/E:** Stock price divided by trailing twelve-month operating earnings.
 Highest P/E ratio in past 5 years.
 Current P/E ratio using latest reported earnings and current price.
 Lowest P/E ratio in past 5 years.
- P/CF:** Stock price divided by cash flow generated in latest fiscal year.
 Highest P/CF ratio in past 5 years.
 Current P/CF using latest fiscal year cash flow and current price.
 Lowest P/CF ratio in past 5 years.
- P/BV:** Stock price divided by latest book value per share.
 Highest P/BV ratio in past 5 years.
 Current P/BV using latest book value and current price.
 Lowest P/BV ratio in past 5 years.
- P/Sales:** Stock price divided by sales (revenues) per share in latest fiscal year.
 Highest P/Sales ratio in past 5 years.
 Current P/Sales using latest fiscal sales (revenue) and current price.
 Lowest P/Sales ratio in past 5 years.
- P/Value:** Stock price divided by company's intrinsic value, from Ford's dividend discount model.
 Highest P/Value ratio in past 5 years.
 Current P/Value using latest intrinsic value and current price.
 Lowest P/Value ratio in past 5 years.

Sales Growth:

- 5 yr:** Five-year sales (revenue) growth rate, in percent per year, compared to its industry group average (see below for "industry group" definition).
- 12 mo:** Latest twelve month sales (revenue) compared to the prior 12 month sales, in percent, compared to its industry group average.
- Last Qtr:** Latest quarter's sales (revenue) compared to same quarter of prior year, in percent, compared to its industry group average.

Earnings Growth:

- 5 yr:** Five-year earnings per share growth rate, in percent per year, compared to its industry group average.
- 12 mo:** Latest twelve month earnings per share compared to prior twelve months, in percent, compared to its industry group average.
- Last qtr:** Latest quarter's earnings per share compared to the same quarter of prior year, in percent, compared to its industry group average.
- 1 yr est:** Current fiscal year consensus estimate (FY1) compared to the last fiscal year EPS, in percent, compared to its industry group average.
- 2 yr est:** Next fiscal year consensus estimate (FY2) compared to current fiscal year estimate (FY1), in percent, compared to its industry group average.

Value Graphs

DEFINITIONS

Price Graph:

Monthly high, low and close (split and spin-off adjusted).

Dotted Line: Monthly per share intrinsic value of company as determined by Ford's dividend discount model.

Solid Line Band: Valuation bands based on the highest and lowest P/E ratio in the past five years applied to the trailing 12 month operating earnings, then to the FY1 and FY2 earnings estimates.

Volume Graph:

Volume (10000s): Monthly Volume in units of 10,000 shares.

Fiscal Year End Fundamental Data for Five Years

Fiscal Yr End: Month and year of each fiscal year end.

Sales: Fiscal year sales (revenues), in \$ millions.

EPS: Fiscal year earnings per share, in \$ millions.

Net Profit on Sales: Net profit margin calculated as fiscal year reported earnings (see definition below) divided by fiscal year sales, in percent.

Cash Flow/Share: Fiscal year net profit less preferred dividends plus depreciation, depletion, and similar non cash charges, divided by shares outstanding.

Book Value/Share: Common Shareholders equity at fiscal year end, divided by shares outstanding.

Return on Equity: Reported earnings available to common shareholders divided by common equity in percent.

Debt to Equity: Long term debt divided by common plus preferred equity.

Consensus Earnings Estimates (from FirstCall)

Fiscal Years: Year and month of fiscal year end for estimate.

EPS: Earnings per share estimates for current fiscal year (FY1) and next fiscal year (FY2).

% Chg: Current fiscal year estimate (FY1) compared to prior fiscal reported earnings per share, in percent. Next fiscal year estimate (FY2) compared to current fiscal year estimate (FY1), in percent.

Current Data

Current Price: Closing price for date of graph update.

Market Capitalization (mil): Total market value of common stock outstanding, in \$ millions.

Common Shares Out (mil): Common shares outstanding, in \$ millions.

Shares Held by Institutions: Shares held by institutions, in percent of shares outstanding.

Average Daily Volume (100s): Daily trading volume, averaged over past 3 months, in 100's.

Beta: Price sensitivity to market, based on monthly price changes relative to the S&P 500 Index over the past 60 months.

Exchange: Principal exchange where traded (may be traded on other exchanges also).

Options Trading: Indicates whether stock has listed options.

Earnings, Cash Flow, & Dividends

Latest Qtr. Report: Month and year of latest earnings report (e.g. 1998/04).

12-Mo Sales (mil): Sales consisting of 12 month sales (revenues) for the past four quarters, in \$ millions.

12-Mo EPS: Current 12 month earnings per share based on latest reported information, but excluding extraordinary items.

12-Mo Operating EPS: 12-month earnings per share excluding all non-recurring items.

Cash Flow/Share (FY): Cash flow per share, equal to net profit less preferred dividends plus depreciation, depletion, and similar non-cash charges, divided by shares outstanding, as of the latest fiscal year-end.

Annual Dividend: Dividend per share at the current indicated annual rate.

Dividend Payout Ratio: Dividend payout ratio, equal to indicated dividend divided by normal earnings (see definition below).

Dividend Yield: Current dividend yield in percent.

Ford Value Graphs

DEFINITIONS

Ford Evaluations: (based on Ford proprietary models and evaluations).

Quality Rating: Quality rating assigned by Ford indicating financial strength and earnings predictability, ranging from A+ to C-. B is average.

Growth Persistence Rating: Growth persistence rating assigned by Ford indicating past and expected future consistency of earnings growth, ranging from A to D. C is average.

Projected Growth Rate: Growth rate estimate for earnings and dividends by Ford for the next 10 years in percent per year.

Ford DDM Value: Intrinsic value per share, as determined by Ford's dividend discount model.

Price to Value Ratio (PVA): Price/value ratio, or current share price divided by intrinsic value, as determined by Ford's dividend discount model.

PVA/5 Yr. Average: Price/value ratio divided by the stock's 5-year average price/value ratio.

PVA Relative to Market: Price/value ratio relative to the market, i.e. divided by the average PVA for Ford's universe.

Sales Momentum Percentile: measures the acceleration or deceleration in sales growth for 12-month sales ending in each of the last 5 quarters.

Share Buyback: Share buyback/issuance, equal to percent change in shares outstanding from 12 months ago.

Normal Earnings: Normal 12 month earnings per share, which differ from reported earnings when the latter have been affected by non-recurring or cyclical effect; i.e., the earnings per share which the company should be realizing under normal or typical conditions.

Price/Normal Earnings: Price to earnings ratio using Ford's normal earnings as the denominator.

Value/Momentum Model

Value/Momentum Percentile: Combines relative value with acceleration of earnings growth and price momentum. Earnings yield based on Fords operating earnings for the trailing three quarters and the current quarter estimate; Fords Earnings Momentum Percentile, and Fords Price Momentum Percentile are combined as a multi factor model producing superior results using quarterly, six monthly and twelve month holding periods (percentile, 100 best).

Operating Earnings Yield: Earnings yield in percent, calculated by dividing the 12 month operating earnings per share including an estimate for the current quarter by the share price as of the data base date. In percent.

Earnings Momentum Percentile: Measures the acceleration or deceleration of earnings growth by adjusting earnings trend for the volatility of earnings (percentile, 100 best).

Price Momentum Percentile: Twelve-month price performance adjusted for latest quarter and latest month performance (percentile, 100 best).

Industry Group: A group of 3 to 8 companies within the same industry and having similar product lines, markets, and/or company size.

Name of company and ticker symbol.

Price: Closing price for date of graph update.

P/E: Price to earnings ratio based on trailing twelve-month earnings.

FORD Industry Value Graphs

GROWTH DEFINITIONS

Industry Group: Subset of Three to eight companies in a Ford industry classification whose primary business and volume of sales (revenue) are similar.

Date: Month, day, and year of graph update.

Page Number: 1 of 3

Company: Name of company and ticker symbol.

Market Cap (mil): Total market value of common stock outstanding, in \$ millions.

Sales (mil): Sales (revenue) for the past four quarters in \$ millions.

5-Yr Dividend Growth: Five-year dividend growth rate for each company in industry group, in percent per year.

Consensus Projected Growth: FirstCall consensus estimated future growth rate for each company in industry group.

5-Yr EPS Growth: Five-year reported earnings per share growth rate for each company in industry group, in percent per year.

12-Mo EPS Growth: Latest twelve-month operating earnings per share compared to prior twelve months for each company in industry group, in percent.

Last Qtr EPS Growth: Latest quarter's operating earnings per share compared to the same quarter of prior year for each company in industry group, in percent.

5-Yr Sales Growth: Five year sales (revenue) growth rate for each company in industry group, in percent per year.

12-Mo Sales Growth: Latest twelve-month sales (revenue) compared to the prior twelve-month sales for each company in industry group, in percent.

Last Qtr Sales Growth: Latest quarter's sales (revenue) compared to same quarter of prior year for each company in industry group, in percent.

FORD Industry Value Graphs

VALUATION AND RETURN-DEFINITIONS

Industry Group: Subset of three to eight companies in a Ford industry classification, whose primary business and volume of sales (revenue) are similar.

Date: Month, date and year of graph update.

Page Number: 2 of 3

Company: Name of company and ticker symbol.

Price: Price of company as of date of graph update.

Volume (100s): Daily trading volume, averaged over past 3 months, in 100's.

3-Mo Price Gain (%): Percent price gain since the month-end 3 months ago.

12-Mo Price Gain (%): Percent price gain since the month-end 12 months ago.

5-Yr Price Gain (Annual %): Previous 5-year price gain in percent per year.

5-Yr Total Return (Annual %): Previous 5-year total return (price gain plus yield) in percent per year.

Beta: Beta for each company in industry group (price sensitivity to market, based on monthly price changes relative to the S&P 500 Index over the past 60 months).

Price/Earnings 5-yr Hi/Low: Stock price divided by trailing twelve-month operating earnings for each industry group company.

Highest P/E ratio in past 5 years (3 years used if 5 years not available).

Current P/E using latest reported operating earnings and current price.

Lowest P/E ratio in past 5 years (3 years used if 5 years not available).

Price/Book 5-Yr Hi/Low: Stock price divided by the latest book value per share for each industry group company.

Highest P/BV ratio in past 5 years (3 years used if 5 years not available).

Current P/BV using latest book value and current price.

Lowest P/BV ratio in past 5 years (3 years used if 5 years not available).

Price/Sales 5-yr Hi/Low: Stock price divided by sales (revenue) per share in latest fiscal year, for each industry group company.

Highest P/Sales ratio in past 5 years (3 years used if 5 years not available).

Current P/Sales using latest fiscal sales (revenue) and current price.

Lowest P/Sales ratio in past 5 years (3 years used if 5 years not available).

Return on Equity: Operating earnings available to common shareholders divided by common equity, in percent, for each industry group company.

Shares Held By Institutions: Shares held by institutions, in percent, for each industry group company.

Long-term Debt/Equity: Long term debt divided by common plus preferred equity, for each industry group company.

FORD Industry Value Graphs

FORD EVALUATIONS-DEFINITIONS

Industry Group: Subset of Three to eight companies in a Ford industry classification whose primary business and volume of sales (revenue) are similar.

Date: Month, day, and year of graph update.

Page Number: 3 of 3

Company: Name of company and ticker symbol.

Quality Rating: Quality rating assigned by Ford indicating financial strength and earnings predictability, ranging from A+ to C-. B is average.

Growth Persist: Growth persistence rating assigned by Ford indicating past and expected future consistency of earnings growth, ranging from A to D. C is average.

Current 12-Mo EPS: Current 12-month earnings per share based on latest reported information.

Latest 12-Mo Op EPS: 12-month earnings per share excluding all non-recurring items.

Normal 12-Mo EPS: Normal 12-month earnings per share, which differ from reported earnings when the latter have been affected by non-recurring or cyclical factors.

Earnings Variability: Equal to the standard deviation of annual earnings from a growth curve over the past eight years, expressed as a percent of normal earnings.

Price/Value 5-Yr Hi/Low: Stock price divided by company's intrinsic value, from Ford's dividend discount model.

Highest P/Value ratio in past 5 years.

Current P/Value using latest intrinsic value and current price.

Lowest P/Value ratio in past 5 years.

Ford Projected Growth Rate: Growth rate estimate for earnings and dividends by Ford for the next 10 years in percent per year.

Earnings Momentum: Measures the acceleration or deceleration of earnings growth by adjusting earnings trend for the volatility of earnings (percentile, 100 best).

Sales Momentum: Measures the acceleration or deceleration in sales (revenue) growth for the 12 month sales ending in each of the last 5 quarters (percentile, 100 best).

Price Momentum: Twelve-month price performance adjusted for latest quarter and latest month performance (percentile, 100 best).

Value Momentum: Combines relative value with acceleration of earnings growth and price momentum. Earnings yield based on Fords operating earnings for the trailing three quarters and the current quarter estimate; Fords Earnings Momentum Percentile, and Fords Price Momentum Percentile are combined as a multi factor model producing superior results using quarterly, six monthly and twelve month holding periods (percentile, 100 best).

Share buyback/issuance (12-Mo Share Change): Share buyback/issuance, equal to percent change in shares outstanding from 12 months ago.

Exhibit B



FORD DATA BASE

The Ford Data Base is a computerized file of financial and market data covering 2680 leading common stocks. The file is updated weekly following the close of business each Friday (except when the file is updated as of the last day of the month.) Data from prior years are retained in a historical file, which covers the period from December 1970 to date.

1. Company name, 16 characters maximum. (NAM)
2. Share price. (PRI)
3. Ticker symbol (or EE number, international data base only). (TKR)
4. Cusip number (or sedol number, international data base only). (CSP)
5. Country code (international data base only). (COU)
6. Industry code (see separate listing). (IND)

STOCK VALUATION DATA

Ford Input:

7. Quality rating assigned by Ford indicating financial strength and earnings predictability, ranging from A+ to C- (or 1 to 9 numerically). B (5) is average. (QTY)
8. Growth persistence rating assigned by Ford indicating past and expected future consistency of earnings growth, ranging from A to D (or 2 to -1 numerically). C (0) is average. (GRP)
9. Current/normal earnings ratio, indicating whether earnings are currently abnormal compared to Ford's estimate of normal earnings. (CNE)
10. Growth rate estimate for earnings and dividends by Ford for the next 10 years in percent per year. (GRO)

Price/Earnings and Cash Flow Data:

11. Current price/earnings ratio using latest reported earnings. ♦ (PEC)
12. Normal price/earnings ratio using Ford's normal earnings estimate. (PER)
13. Normal price/earnings ratio divided by the stock's 5-year average normal P/E. % (PEH)
14. Normal price/earnings ratio divided by the growth rate estimate. (PEG)
15. Price/cash flow per share ratio. ♦ (PCF)

Misc. Value Parameters:

16. Ratio of share price to book value. ♦ (PDK)
17. Share price divided by sales per share. (PSS)
18. Internal rate of return on investment in common stock, found by altering the standard Ford valuation procedure to estimate the investor's rate of return, in percent per year. (ROI)

Ford Valuation Data:

19. Intrinsic value computed by Ford's dividend discount model, in \$ per share. (VAL)
20. Price/value ratio, or current share price divided by intrinsic value, as determined by Ford's dividend discount model. (PVA)
21. Price/value ratio divided by the stock's 5-year average PVA. % (PVH)
22. Price/value ratio relative to the market, i.e. divided by Ford's average PVA. (PVR)
23. Earnings trend (earnings momentum) computed by Ford's earnings trend model (values are limited to +999). (SED)
24. Relative earnings trend, equal to earnings trend divided by historic deviation. (SDR)
25. Composite price/value and earnings trend parameter, found by Ford to yield the best overall performance, equal to PVA-SED/500. (COM)

EARNINGS DATA AND CASH FLOW

26. Current 12 month earnings per share based on latest reported information. (ECU)
27. Normal 12 month earnings per share, which differ from reported earnings when the latter have been affected by non-recurring or cyclical factors. (ENO)
28. Cash flow per share equal to net profit less preferred dividends plus depreciation, depletion, and similar noncash charges, divided by shares outstanding, as of the latest fiscal year-end. (CFL)
29. Earnings variability, equal to the standard deviation of annual earnings from a growth curve over the past eight years, expressed as percent of normal earnings. (EDV)

Quarterly Earnings Series:

30. -Earnings series, consisting of 12-month operating earnings per share as of the past four quarters, plus a fifth value including an estimate for the current quarter (i from 1 to 5; 1 is the oldest). (EQi)
35. -Earnings series, consisting of quarterly operating earnings per share for the past seven quarters, plus an estimate for the current quarter (i from 1 to 8; 1 is the oldest). (QEi)
43. Month and year of latest earnings report (e.g. 1293). (MFQ)

(continued)

DIVIDEND DATA

44. Dividend (\$ per share) at the current indicated annual rate. (DIV)
 45. Dividend payout ratio, equal to indicated dividend divided by normal earnings. (DPR)
 46. Current dividend yield in percent. (YLD)
 47. Total return estimate (Ford's growth rate estimate plus current yield), in percent per year. (RET)

COMPANY FINANCIAL PERFORMANCE

48. Net profit margin on sales, calculated as normal earnings available to common shareholders divided by sales, as of the latest fiscal year-end, in percent. (NPS)
 49. Return on assets, calculated as normal earnings available to common shareholders divided by total assets, as of the latest fiscal year-end in percent. (ROA)
 50. Return on equity, equal to normal earnings available to common shareholders divided by common equity, in percent. ROE is updated monthly, along with earnings and book value. ♦ (ROE)
 51. Reinvestment (plowback) on equity, equal to normal earnings less dividends as a percent of common stockholders equity, updated monthly. ♦ (PLB)

FIVE YEAR HISTORICAL DATA**Growth: %**

52. 5-year reported earnings per share growth rate. (In percent per year.) (HEG)
 53. 5-year sales (revenue) growth rate, in percent per year. (HSG)
 54. 5-year dividend growth rate, in percent per year. (HDG)

PE and Price/Value History: %

55. Extreme high P/E ratio using normal earnings. (HPE)
 56. Average P/E ratio using normal earnings. (APE)
 57. Extreme low P/E ratio using normal earnings. (LPE)
 58. Average price/value ratio. (HPV)

SHARE PRICE HISTORY

59. Previous month-end share price, adjusted for stock dividends and splits. (PRO)
 60. Price gain since last month-end in percent. (PGN)
 61. Percent price gains since the month-end (-99.9 indicates old prices not available):
 3 months ago (PGQ)
 6 months ago (PGH)
 12 months ago (PGY)
 Year to date (PGD)
 65. Previous 5 year price gain, in percent per year. % (PGF)
 66. Previous 5 year total return (price gain plus yield) in percent per year. % (REF)
 67. Beta (price sensitivity to market, based on monthly price changes relative to the S&P 500 Index over the past 60 months). (BET)
 68. Daily trading volume, averaged over past 3 months, in 100's. (VOL)

69. Price momentum, from Ford's momentum model. (PRM)

SALES, CAPITALIZATION, & OWNERSHIP

70. Company annual sales (revenue) for the last fiscal year, in \$ millions. (SAL)

Shares, Inst. Holdings, Market Cap.:

71. Common shares outstanding, in millions (SHR)
 72. Shares held by institutions, in percent. (FND)
 73. Market capitalization (total market value of common stock outstanding), in \$ millions. (CAP)

Equity and Liabilities: (as of the latest fiscal year-end.)

74. Book value per share adjusted monthly for earnings plowback (BKV)
 75. Preferred equity, as a percent of assets. (PEQ)
 76. Common equity, as a percent of assets. (CEQ)
 77. Long term debt, as a percent of assets. □ (LTD)
 78. Other debt, liabilities, etc., as a percent of assets. □ (ODL)
 79. Total assets, in \$ million. (ASS)
 80. Month and year of latest fiscal year report (e.g. 1293) (MFY)

DEBT RATIOS*(as of the latest fiscal year-end)*

81. Current ratio (current assets divided by current liabilities). (CCR)
 82. Long term debt/equity ratio, using common plus preferred equity (maximum value is 9.99; 9.99 is also used if equity is negative) (DEQ)
 83. Total debt/asset ratio (where total debt includes all liabilities, not including preferred or common equity). (DAS)

VARIOUS INDICATORS*(see separate list of codes)*

84. Change symbol, indicating a change within the month which deserves attention. (CHI)
 85. Screening aid indicating when price/value, earnings trend, or their composite parameter is in the top 10%. Only stocks with quality ratings of B- or better qualify. (VEI)
 86. Foreign-based company indicator. (FNI)
 87. Options indicator, for stocks with listed options. (OPI)
 88. Exchange indicator, denoting exchange where traded (may be traded on other exchanges also). (EXI)
 89. Indicator when included in the DJIA, S&P 500, or Value Line averages. (AVI)
 90. S&P MidCap 400 indicator. (MCI)
 91. Ford Buy/Sell/Hold indicator. (BHS)
 92. Primary versus fully diluted earnings per share indicator. (FDI)
 93. Indicator when fiscal year data are estimated, due to merger, spinoff, or other restructuring. (YEI)

- ♦ If the denominator is negative, the number 99.9 (or 9.99 for PBK) is used.
 * An extreme number (e.g. 99.9 or -99.9) is used if five years are unavailable.
 □ An extreme number (e.g. 99.9) is used if common equity is negative.

Value Graphs

DEFINITIONS

Ford Value Graphs:

Company Name

Ticker Symbol

Industry - Ford has 88 industry classifications

Date of Graph Update

Valuation Ratios vs. 5 yr. Hi/Low (3 year Hi/Low if 5 year not available)

P/E: Stock price divided by trailing twelve-month operating earnings.

Highest P/E ratio in past 5 years.

Current P/E ratio using latest reported earnings and current price.

Lowest P/E ratio in past 5 years.

P/CF: Stock price divided by cash flow generated in latest fiscal year.

Highest P/CF ratio in past 5 years.

Current P/CF using latest fiscal year cash flow and current price.

Lowest P/CF ratio in past 5 years.

P/BV: Stock price divided by latest book value per share.

Highest P/BV ratio in past 5 years.

Current P/BV using latest book value and current price.

Lowest P/BV ratio in past 5 years.

P/Sales: Stock price divided by sales (revenues) per share in latest fiscal year.

Highest P/Sales ratio in past 5 years.

Current P/Sales using latest fiscal sales (revenue) and current price.

Lowest P/Sales ratio in past 5 years.

P/Value: Stock price divided by company's intrinsic value, from Ford's dividend discount model.

Highest P/Value ratio in past 5 years.

Current P/Value using latest intrinsic value and current price.

Lowest P/Value ratio in past 5 years.

Sales Growth:

5 yr: Five-year sales (revenue) growth rate, in percent per year, compared to its industry group average (see below for "industry group" definition).

12 mo: Latest twelve month sales (revenue) compared to the prior 12 month sales, in percent, compared to its industry group average.

Last Qtr: Latest quarter's sales (revenue) compared to same quarter of prior year, in percent, compared to its industry group average.

Earnings Growth:

5 yr: Five-year earnings per share growth rate, in percent per year, compared to its industry group average.

12 mo: Latest twelve month earnings per share compared to prior twelve months, in percent, compared to its industry group average.

Last qtr: Latest quarter's earnings per share compared to the same quarter of prior year, in percent, compared to its industry group average.

1 yr est: Current fiscal year consensus estimate (FY1) compared to the last fiscal year EPS, in percent, compared to its industry group average.

2 yr est: Next fiscal year consensus estimate (FY2) compared to current fiscal year estimate (FY1), in percent, compared to its industry group average.

FORD Value Graphs

DEFINITIONS

Price Graph:

Monthly high, low and close (split and spin-off adjusted).

Dotted Line: Monthly per share intrinsic value of company as determined by Ford's dividend discount model.

Solid Line Band: Valuation bands based on the highest and lowest P/E ratio in the past five years applied to the trailing 12 month operating earnings, then to the FY1 and FY2 earnings estimates.

Volume Graph:

Volume (10000s): Monthly Volume in units of 10,000 shares.

Fiscal Year End Fundamental Data for Five Years

Fiscal Yr End: Month and year of each fiscal year end.

Sales: Fiscal year sales (revenues), in \$ millions.

EPS: Fiscal year earnings per share, in \$ millions.

Net Profit on Sales: Net profit margin calculated as fiscal year reported earnings (see definition below) divided by fiscal year sales, in percent.

Cash Flow/Share: Fiscal year net profit less preferred dividends plus depreciation, depletion, and similar non cash charges, divided by shares outstanding.

Book Value/Share: Common Shareholders equity at fiscal year end, divided by shares outstanding.

Return on Equity: Reported earnings available to common shareholders divided by common equity in percent.

Debt to Equity: Long term debt divided by common plus preferred equity.

Consensus Earnings Estimates (from FirstCall)

Fiscal Years: Year and month of fiscal year end for estimate.

EPS: Earnings per share estimates for current fiscal year (FY1) and next fiscal year (FY2).

% Chg: Current fiscal year estimate (FY1) compared to prior fiscal reported earnings per share, in percent. Next fiscal year estimate (FY2) compared to current fiscal year estimate (FY1), in percent.

Current Data

Current Price: Closing price for date of graph update.

Market Capitalization (mil): Total market value of common stock outstanding, in \$ millions.

Common Shares Out (mil): Common shares outstanding, in \$ millions.

Shares Held by Institutions: Shares held by institutions, in percent of shares outstanding.

Average Daily Volume (100s): Daily trading volume, averaged over past 3 months, in 100's.

Beta: Price sensitivity to market, based on monthly price changes relative to the S&P 500 Index over the past 60 months.

Exchange: Principal exchange where traded (may be traded on other exchanges also).

Options Trading: Indicates whether stock has listed options.

Earnings, Cash Flow, & Dividends

Latest Qtr. Report: Month and year of latest earnings report (e.g. 1998/04).

12-Mo Sales (mil): Sales consisting of 12 month sales (revenues) for the past four quarters, in \$ millions.

12-Mo EPS: Current 12 month earnings per share based on latest reported information, but excluding extraordinary items.

12-Mo Operating EPS: 12-month earnings per share excluding all non-recurring items.

Cash Flow/Share (FY): Cash flow per share, equal to net profit less preferred dividends plus depreciation, depletion, and similar non-cash charges, divided by shares outstanding, as of the latest fiscal year-end.

Annual Dividend: Dividend per share at the current indicated annual rate.

Dividend Payout Ratio: Dividend payout ratio, equal to indicated dividend divided by normal earnings (see definition below).

Dividend Yield: Current dividend yield in percent.

FORD Value Graphs

DEFINITIONS

Ford Evaluations: (based on Ford proprietary models and evaluations).

Quality Rating: Quality rating assigned by Ford indicating financial strength and earnings predictability, ranging from A+ to C-. B is average.

Growth Persistence Rating: Growth persistence rating assigned by Ford indicating past and expected future consistency of earnings growth, ranging from A to D. C is average.

Projected Growth Rate: Growth rate estimate for earnings and dividends by Ford for the next 10 years in percent per year.

Ford DDM Value: Intrinsic value per share, as determined by Ford's dividend discount model.

Price to Value Ratio (PVA): Price/value ratio, or current share price divided by intrinsic value, as determined by Ford's dividend discount model.

PVA/5 Yr. Average: Price/value ratio divided by the stock's 5-year average price/value ratio.

PVA Relative to Market: Price/value ratio relative to the market, i.e. divided by the average PVA for Ford's universe.

Sales Momentum Percentile: measures the acceleration or deceleration in sales growth for 12-month sales ending in each of the last 5 quarters.

Share Buyback: Share buyback/issuance, equal to percent change in shares outstanding from 12 months ago.

Normal Earnings: Normal 12 month earnings per share, which differ from reported earnings when the latter have been affected by non-recurring or cyclical effect; i.e., the earnings per share which the company should be realizing under normal or typical conditions.

Price/Normal Earnings: Price to earnings ratio using Ford's normal earnings as the denominator.

Value/Momentum Model

Value/Momentum Percentile: Combines relative value with acceleration of earnings growth and price momentum. Earnings yield based on Fords operating earnings for the trailing three quarters and the current quarter estimate; Fords Earnings Momentum Percentile, and Fords Price Momentum Percentile are combined as a multi factor model producing superior results using quarterly, six monthly and twelve month holding periods (percentile, 100 best).

Operating Earnings Yield: Earnings yield in percent, calculated by dividing the 12 month operating earnings per share including an estimate for the current quarter by the share price as of the data base date. In percent.

Earnings Momentum Percentile: Measures the acceleration or deceleration of earnings growth by adjusting earnings trend for the volatility of earnings (percentile, 100 best).

Price Momentum Percentile: Twelve-month price performance adjusted for latest quarter and latest month performance (percentile, 100 best).

Industry Group: A group of 3 to 8 companies within the same industry and having similar product lines, markets, and/or company size.

Name of company and ticker symbol.

Price: Closing price for date of graph update.

P/E: Price to earnings ratio based on trailing twelve-month earnings.

FORD *Industry Value Graphs*

GROWTH DEFINITIONS

Industry Group: Subset of Three to eight companies in a Ford industry classification whose primary business and volume of sales (revenue) are similar.

Date: Month, day, and year of graph update.

Page Number: 1 of 3

Company: Name of company and ticker symbol.

Market Cap (mil): Total market value of common stock outstanding, in \$ millions.

Sales (mil): Sales (revenue) for the past four quarters in \$ millions.

5-Yr Dividend Growth: Five-year dividend growth rate for each company in industry group, in percent per year.

Consensus Projected Growth: FirstCall consensus estimated future growth rate for each company in industry group.

5-Yr EPS Growth: Five-year reported earnings per share growth rate for each company in industry group, in percent per year.

12-Mo EPS Growth: Latest twelve-month operating earnings per share compared to prior twelve months for each company in industry group, in percent.

Last Qtr EPS Growth: Latest quarter's operating earnings per share compared to the same quarter of prior year for each company in industry group, in percent.

5-Yr Sales Growth: Five year sales (revenue) growth rate for each company in industry group, in percent per year.

12-Mo Sales Growth: Latest twelve-month sales (revenue) compared to the prior twelve-month sales for each company in industry group, in percent.

Last Qtr Sales Growth: Latest quarter's sales (revenue) compared to same quarter of prior year for each company in industry group, in percent.

FORD Industry Value Graphs

VALUATION AND RETURN-DEFINITIONS

Industry Group: Subset of three to eight companies in a Ford industry classification, whose primary business and volume of sales (revenue) are similar.

Date: Month, date and year of graph update.

Page Number: 2 of 3

Company: Name of company and ticker symbol.

Price: Price of company as of date of graph update.

Volume (100s): Daily trading volume, averaged over past 3 months, in 100's.

3-Mo Price Gain (%): Percent price gain since the month-end 3 months ago.

12-Mo Price Gain (%): Percent price gain since the month-end 12 months ago.

5-Yr Price Gain (Annual %): Previous 5-year price gain in percent per year.

5-Yr Total Return (Annual %): Previous 5-year total return (price gain plus yield) in percent per year.

Beta: Beta for each company in industry group (price sensitivity to market, based on monthly price changes relative to the S&P 500 Index over the past 60 months).

Price/Earnings 5-yr Hi/Low: Stock price divided by trailing twelve-month operating earnings for each industry group company.

Highest P/E ratio in past 5 years (3 years used if 5 years not available).

Current P/E using latest reported operating earnings and current price.

Lowest P/E ratio in past 5 years (3 years used if 5 years not available).

Price/Book 5-Yr Hi/Low: Stock price divided by the latest book value per share for each industry group company.

Highest P/BV ratio in past 5 years (3 years used if 5 years not available).

Current P/BV using latest book value and current price.

Lowest P/BV ratio in past 5 years (3 years used if 5 years not available).

Price/Sales 5-yr Hi/Low: Stock price divided by sales (revenue) per share in latest fiscal year, for each industry group company.

Highest P/Sales ratio in past 5 years (3 years used if 5 years not available).

Current P/Sales using latest fiscal sales (revenue) and current price.

Lowest P/Sales ratio in past 5 years (3 years used if 5 years not available).

Return on Equity: Operating earnings available to common shareholders divided by common equity, in percent, for each industry group company.

Shares Held By Institutions: Shares held by institutions, in percent, for each industry group company.

Long-term Debt/Equity: Long term debt divided by common plus preferred equity, for each industry group company.

FORD Industry Value Graphs

FORD EVALUATIONS-DEFINITIONS

Industry Group: Subset of Three to eight companies in a Ford industry classification whose primary business and volume of sales (revenue) are similar.

Date: Month, day, and year of graph update.

Page Number: 3 of 3

Company: Name of company and ticker symbol.

Quality Rating: Quality rating assigned by Ford indicating financial strength and earnings predictability, ranging from A+ to C-. B is average.

Growth Persist: Growth persistence rating assigned by Ford indicating past and expected future consistency of earnings growth, ranging from A to D. C is average.

Current 12-Mo EPS: Current 12-month earnings per share based on latest reported information.

Latest 12-Mo Op EPS: 12-month earnings per share excluding all non-recurring items.

Normal 12-Mo EPS: Normal 12-month earnings per share, which differ from reported earnings when the latter have been affected by non-recurring or cyclical factors.

Earnings Variability: Equal to the standard deviation of annual earnings from a growth curve over the past eight years, expressed as a percent of normal earnings.

Price/Value 5-Yr Hi/Low: Stock price divided by company's intrinsic value, from Ford's dividend discount model.

Highest P/Value ratio in past 5 years.

Current P/Value using latest intrinsic value and current price.

Lowest P/Value ratio in past 5 years.

Ford Projected Growth Rate: Growth rate estimate for earnings and dividends by Ford for the next 10 years in percent per year.

Earnings Momentum: Measures the acceleration or deceleration of earnings growth by adjusting earnings trend for the volatility of earnings (percentile, 100 best).

Sales Momentum: Measures the acceleration or deceleration in sales (revenue) growth for the 12 month sales ending in each of the last 5 quarters (percentile, 100 best).

Price Momentum: Twelve-month price performance adjusted for latest quarter and latest month performance (percentile, 100 best).

Value Momentum: Combines relative value with acceleration of earnings growth and price momentum. Earnings yield based on Fords operating earnings for the trailing three quarters and the current quarter estimate; Fords Earnings Momentum Percentile, and Fords Price Momentum Percentile are combined as a multi factor model producing superior results using quarterly, six monthly and twelve month holding periods (percentile, 100 best).

Share buyback/Issuance (12-Mo Share Change): Share buyback/issuance, equal to percent change in shares outstanding from 12 months ago.

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.